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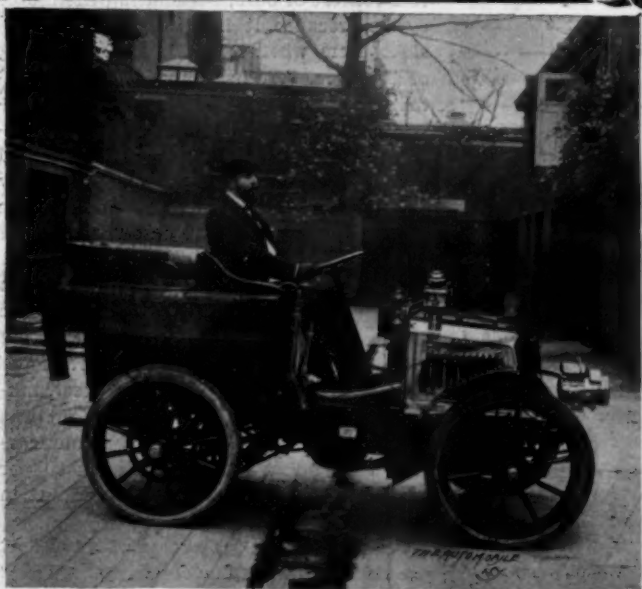
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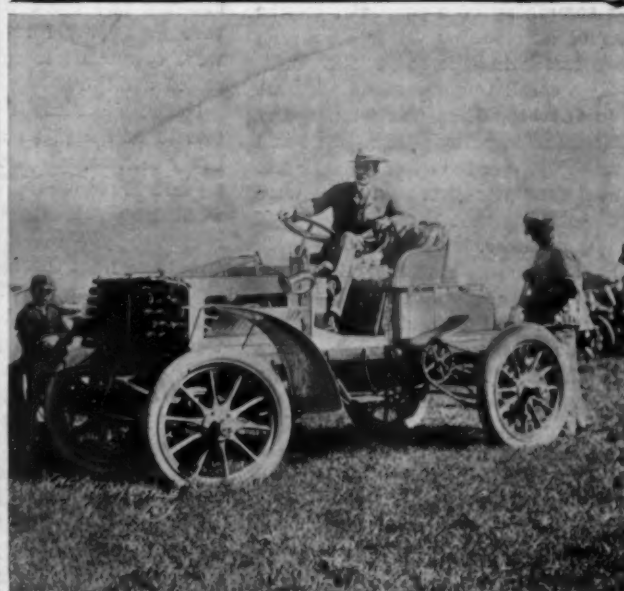
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PROMINENT OFFICERS OF THE AUTOMOBILE CLUB OF AMERICA.

Mr. W. E. Scarritt on the Endurance Run.

One of the most interesting addresses at the "Experience Meeting" of the A. C. A., Tuesday evening, Oct. 22, was that of Mr. Scarritt, who spoke as follows:

By reference to the old files of the newspapers away back a half a century ago, we learn that one of the chief arguments used against the introduction of the steam locomotive was that in the spring-time, in passing through the country districts, the vibration which was caused by the engine, and the rumble of wheels, would damage the fruit crop. That was one of the objections seriously made at that time. Some of the objections that have been made to the automobile industry and to the running of automobiles are just as silly. This trip to Buffalo will stand ever memorable in the minds of those who took part in it. I have been trying to think of some comparison in history which might illustrate the feelings of that little band who finally succeeded in pushing through to Rochester. I have thought of the Puritans at Plymouth Rock; I have thought of the Spartans at Thermopylae; I have thought of numerous instances where people were in dire danger and distress; but I have not yet been able to find any parallel to the experiences we passed through. The Puritans had only to face the weather and the Indians; we had more than that to face. The Spartans had certain death to face. But, you know it is a great deal more agonizing for men to brave the *uncertainties* of death than it is to face the real article itself, and we did not know "where we were at" and what fate impended a great deal of the time.

Now, Mr. Chairman, I think that our experiences as we relate them can only be valuable as we are exactly frank and exactly truthful. I have been known perhaps as something of a pessimist on the question of automobiles. I was so rash on one occasion in this room as to offer to put up a small wager that no machine would do anything at any time under any circumstances. I apologize to the club and to the machine. We have had a living and a practical demonstration that there were a lot of machines that would do a lot of things lots of times.

I think, gentlemen, that there has been in the mind of the public an erroneous idea in regard to the fundamental principle which underlay our contest. As we travelled through the country places the spectators would say: "Let her go! Go on! There are sixteen ahead of you! Keep up! You will get left"—this notwithstanding the fact we did all we could to let the public know that this was not a race. Then some of our brethren of the press have criticised us because of the fact that the club did not limit the amount of repairs which were allowed on machines along the highway. This, gentlemen, was

not a reliability test; it was not a speed contest; it was purely and simply an endurance test. And those of us who succeeded in going over the journey will bear testimony that it was an endurance contest. As one gentleman said: "Endurance contest? I guess it was! I thought so when I ran all day in the mud and the storm and the rain and then lay under my carriage half the night trying to fix it. Oh, yes, it was an endurance contest all right!"

Now we must remember, gentlemen—and I am saying this so that you may be able to answer some criticisms that may be made against the club in regard to the conduct of the contest in this particular—that it was fundamentally an endurance contest; that it was also an experimental contest. The club did not know how many machines would enter into this trial. We knew something of the weaknesses and frailties of the different machines—some of us had paid pretty largely to find them out—and we thought it only proper and right that we should make our rules so broad and so liberal that it would encourage the entering of contestants into this trial. Therefore, there was no limit put upon the amount of repairs which might be made along the highways. If our rules had been more strenuously drawn the chances are that instead of having 80 carriages at the starting line, we would have had 20 or 25 or 30 at the utmost, and then the public would have said: "Oh, this is a fizzle. The mountain has labored and brought forth a mouse. It is a fizzle, and the automobile industry is simply a fad for men of wealth and leisure." But the rules were purposely made broad and liberal and generous, and I think you will agree with me that while the committee did stick to the rules, our interpretation of them was broad and liberal. The result was that we had 80 starting and more than 50 per cent ran through. Therefore, so far as numbers were concerned it certainly could not be called a failure.

Next year it might be well for this contest to be called an endurance and reliability contest, because the idea of reliability and the idea of endurance, while somewhat synonymous, are not exactly synonymous. A machine that could be made to endure and get through all kinds of opposition, is the machine that we were looking for. We found more than forty such. The machine that is qualified to go through with the least trouble and will actually carry out the idea signified by the word "reliable,"—that sort of contest can be taken in hand another year.

It is rather interesting to note how our carriages compare with foreign carriages entered in the endurance and reliability contest abroad. By the way, that is the term that was employed this year by the Automobile Club of Great Britain and Ireland in their 500-

mile contest; the Endurance and Reliability contest of the Automobile Club of Great Britain and Ireland. That club is older than ours; it has 940 members, almost three times as many as we have. They have had several contests already. This year they came to the line with 50 carriages ready to start, and I have taken a great deal of interest in going through the preliminary prospectus and program of the contest. I have condensed here in a very few words some figures comparing their machines with the machines that went through our own contest. I think they will be of interest, and I will give them to you as I have been able to collate them.

I have taken 79 vehicles that entered this contest of ours, eliminating the motor cycles, because it is hardly fair to consider them when it comes to the figuring of averages. We had 79 vehicles; the Automobile Club of Great Britain and Ireland at Glasgow this year had 50. I eliminate one because that was electric, and for the purposes of comparison can hardly be counted in. I find that the average weight of our carriages was 1,705.37 pounds. That was rather a surprising fact to me. I did not think that our American carriages, particularly those that entered this contest, would average so heavy, but the actual weight is 1,705.37 average per vehicle. In the Great Britain contest, taking 50 carriages, the average weight was 1,232½ pounds. You notice that our carriages on an average are almost 50 per cent. heavier than those that took part in the Glasgow contest.

Then I find that the average dead weight per horse-power of our carriage was 185.22 pounds. The average weight per horse-power of the carriages in the foreign contest was 149.56. There you see another substantial difference. The average horse-power per vehicle of our carriages was 9.19 horse-power, and the average horse-power per vehicle of the foreign carriages in the foreign contest, was 8.24 HP.

The average passengers per vehicle in our contest were 2.2; the average passengers carried in the other contest were 3.72.

In the foreign contest the prices at which the manufacturers agree to furnish the machine averaged 446 pounds, something over \$2,200. I have no data at hand to guide me in figuring out the average cost of the carriages in our contest.

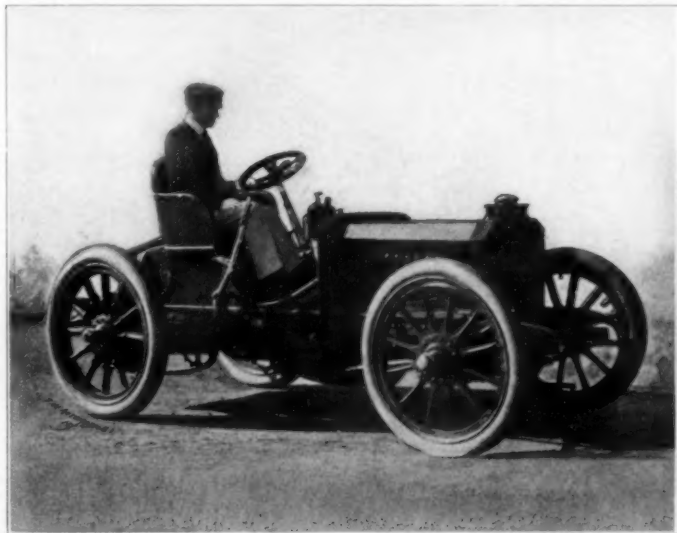
Mr. Chairman, this is so large a subject and there is so much to be said on it that I scarcely know how to touch upon it at all. The automobile industry has passed in this country through the Kindergarten state and it is now in the Primary School. That much, I think it is fair to say. Our endurance contest has shown the manufacturers and the public that we have the foundation laid broad and deep for a new industry; not a "fad," not a "toy" but an industry, which with proper encouragement and guidance will grow.



ALBERT C. BOSTWICK IN RACING COSTUME.



DAVE H. MORRIS AND A. L. RIKER.



W. K. VANDERBILT, JR.



FOXHALL KEENE.

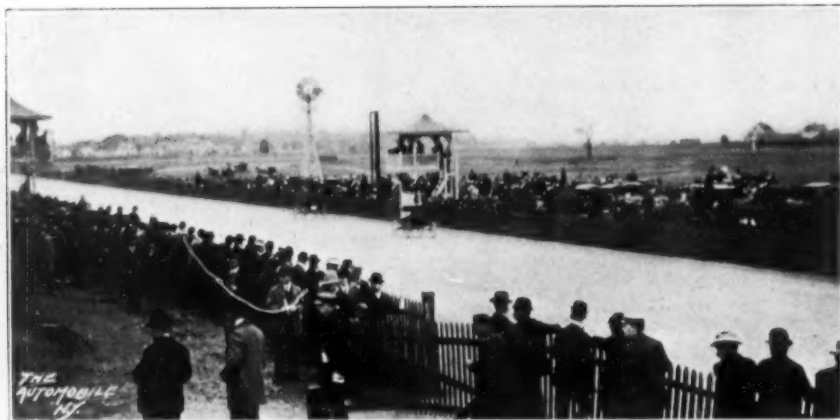


HARLAN W. WHIPPLE.



WINTHROP E. SCARRITT.

WELL-KNOWN MEMBERS OF THE AUTOMOBILE CLUB OF AMERICA.



AT THE NARRAGANSETT PARK RACES.

Races and Records.

History has been made rapidly in the past month, in the matter of American track records. Henri Fournier set the ball rolling with his big Mors racer by making an exhibition mile in 1:13 $\frac{1}{4}$ on the Fort Erie track, Canada, in the week after the endurance run: and since then the records from one to ten miles have been attacked repeatedly by Albert C. Bostwick, Alexander Winton, and Fournier himself, with the net result that all the records from one to ten miles, for a circular track, are now held by Mr. Winton. How long they will stay in his possession remains to be seen, for it is certain that the other aspirants for the honor are not satisfied.

On October 10 Mr. Bostwick, in a test of his 40 HP. Winton at the Empire City track, Yonkers, made five miles in 6:29, and one mile in 1:13 2-5, practically equalling Fournier's Fort Erie record. Then Fournier put his racer on the track, and did a mile in 1:06 4-5, and six miles in 6:47, a record which lasted just two weeks.

On the same day Alexander Winton, at the Grosse Pointe track, Detroit, was cutting Bostwick's figure for the mile. During a three-mile exhibition run, the time for which was 3:42 2-5, he made a mile in 1:12 2-5. That was at the race meet of the Detroit Racing Association. Subsequently, at a private test on the same track on Oct. 24, he made ten miles in 11:09 flat, and the single mile in 1:06 2-5.

Meanwhile, at the Narragansett Park race meet of the Long Island Automobile Club, Fournier had made an attempt to lower his own record, but was unable to do so on account of the high wind, his fastest mile being done in 1:07 $\frac{1}{2}$. Like most of the events of that meet, Fournier's trial was made on Friday, Oct. 17, the postponement of a day being due to the weather. Thursday's events, of five miles each for electric and steam carriages, were won, respectively by H. H. Rice with a Waverley and by Geo. C. Cannon, a Harvard student, with a special machine of his own design. This machine,

in the sweepstakes final of Friday, led Percy Owen's Winton for six miles, when a cylinder head blew out.

The summary of Friday's events is as follows:

Gasolene carriages of 12 HP. and under; five miles.—First heat won by Percy Owen, 12 HP. (Winton); W. P. Norton, 9 HP. (Gasmobile), second; Howard Burdick, 9 HP. (Packard), third. Time, 9m. 3 $\frac{1}{4}$ s.

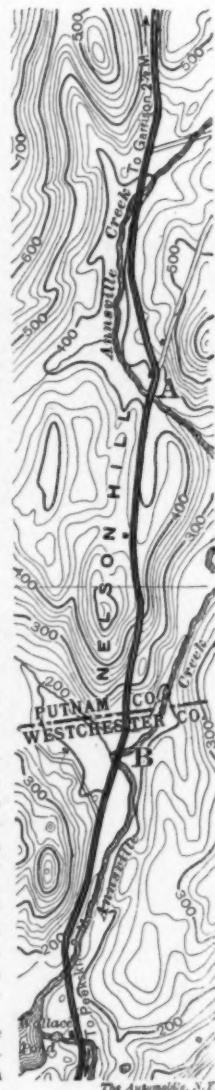
Second heat won by Albert T. Otto, 9 HP. (Gasmobile); Rudolph Meyer, 9 HP. (Gasmobile), second; C. Prescott Knight, 12 HP. (Packard), third. Time, 9m. 8 $\frac{1}{4}$ s.

Final heat won by Percy Owen (Winton); Rudolph Meyers (Gasmobile), second; W. P. Norton (Gasmobile), third. Time, 8m. 51s.

Sweepstakes Final, for winners in all classes; distance ten miles; three starters.—Won by Kenneth A. Skinner on a tricycle with 4 $\frac{1}{2}$ HP. (De Dion) gasolene motor; Percy Owen, 12 HP. (Winton) gasolene automobile, second. Time, 13m. 37 $\frac{1}{2}$ s.

Special class; for gasolene carriages under 6 HP.; five miles.—Won by Kenneth Skinner, 4 $\frac{1}{2}$ HP. (De Dion) motorette; T. Shaw Safe, 4 $\frac{1}{2}$ HP. (De Dion) motorette, second; Ralph Lewis, 4 $\frac{1}{2}$ HP. (De Dion) motorette, third. Time, 12m. 58 $\frac{1}{4}$ s.

Motor tricycle, five miles.—Won by Kenneth A. Skinner, on a 4 $\frac{1}{2}$ HP. tricycle (De Dion); Peter J. Berio, on a tricycle (De Dion) second; C. S. Henshaw, on a tricycle (Aster), third. Time, 6m. 54 $\frac{1}{2}$ s.



Nelson Hill and Vicinity. New Road Follows the Course of Annville Creek from A to B. Contour Lines Show Elevation Above Mean Sea Level.

A Road to Be Built Around Nelson Hill.

Nelson Hill, that bugbear of automobile tourists between New York and Albany, is before many months to be robbed of its terrors. By the enterprise of a public-spirited New York lawyer, William C. Osborn, whose summer home is at Garrison, four miles north of Nelson Hill, surveys have been made and work already begun on a road which, starting just north of the brook at the foot of the hill, follows the course of this brook upward along the base of the hill for a distance of 6,000 feet till it rejoins the present road where the brook crosses it, half a mile north of the top of the hill. The average grade of this new road is but a fraction over 3 per cent, and its maximum slope is only 6 $\frac{1}{2}$ per cent. It is only about a thousand feet longer than the old road with its 17 per cent maximum grade and its hopeless surface.

The new road is being built by private subscription, and Mr. Osborn, wishing to show the town of Garrison how a road ought to be built, got himself elected pathmaster for that district, and is himself supervising the construction of the road at considerable personal sacrifice. In this regard Mr. Osborn's action is reminiscent of a similar one not long ago on the part of A. J. Cassatt, president of the Pennsylvania R. R., who secured the position of pathmaster in the Philadelphia suburb in which he lives, for a somewhat similar purpose.

To build a suitable road at the foot of a hill requires a good deal of cutting and filling, which adds materially to the expense, but it is estimated that a good dirt road, with a rock foundation and 17 feet wide between gutters, can be built for between \$2,500 and \$3,000. The work is being done by day's labor, which has been found to be cheaper than the lowest contract price bid, and the adjoining property owners have given the right of way free of charge. The intention is, when the road is completed, to petition the State, under the Higbie-Armstrong law, to macadamize it, and also to extend the macadam surface from the county line to Garrison. It is expected that the road will be open for traffic by the middle of next spring. When completed, it will be kept in repair by the local road district.

The interest in the undertaking is not confined to the vicinity of Peekskill, for its benefits will be widespread. A number of members of the A. C. A. have made contributions, and President A. R. Shattuck, 11 Broadway, New York, has consented to receive and forward others. It is hoped that there will be enough money left, after the new road is built, to widen the road north of the hill, which for a considerable distance is so narrow that it would be difficult or impossible for an automobile and a horse vehicle to pass each other.

A New Steam Truck.

The accompanying photograph shows the "Hoadley-Knight" front-driven steam truck, rated to carry a load of 6 tons and weighs 4, which has been built by the International Power Co., Providence, R. I. Although details of the construction of this striking machine are not yet available, the leading features may be summarized as follows:

All the weight, exclusive of wheels and axles, is spring supported. The company believes that in the existing condition of our city pavements no mechanism rigidly supported on an axle can have a commercial life. With steel tires, also, the noise of a heavy machine on rough pavements is greatly aggravated by lack of proper spring suspension. The boiler and engines are rigidly mounted together as a



THE INTERNATIONAL "HOADLEY-KNIGHT" STEAM TRUCK.

steam unit, making a complete article of manufacture in itself. Thus not only the boiler but the engines as well have spring support, and this does away with the necessity of flexible steam piping. Driving from the motor to the front wheels is effected vertically through a telescopic coupling, thus permitting relative motion between engines and axle.

As the front wheels are used as drivers, they are much larger than the rear wheels, and it is claimed that the danger of skidding is wholly removed, an important point in commercial work which must be prosecuted in any weather. Steel tires are used, those on the front wheels being 9 in.

The two engines are small and fast running, having very little vibration, and so light of weight that a couple of men can lift one without trouble. They are compounded, one motor being for high pressure and the other taking its steam at low pressure from the high pressure motor, the purpose being to prevent continued slipping of either drive wheel.

Glasgow Trials and Other Automobile Matters in Great Britain.

(Notes of an official observer.)

It was the privilege of the writer, during the early part of September of the present year, to act as official observer in connection with the notable endurance test organized by the Automobile Club of Great Britain and Ireland, assisted by the Scottish Automobile Club. While I had not gone to England with the express purpose of taking part in the "Big Event," as it was and still is called, it was with no little pleasure I received Secretary Johnson's kind letter informing me that a place had been reserved for me on a different car each of the five days.

It may not be out of place for me to refer briefly to the unusually thorough manner in which the details of the test

So far as can now be ascertained the result was eminently satisfactory. The machines were kept under observation from the end of the week terminating August 31, until the night of Friday, September 6. Each evening the observer on each car turned it over to an official attendant who in turn returned it to the official observer the next morning. The idea was to see how the machines would behave if run about 100 miles each day for five consecutive days while having only nominal work done on the mechanism.

I had noticed special instructions were given to drivers not to drive fast at certain points, as it was claimed the horses in Scotland were less familiar with automobiles than those over the border. I declare out of all the days' runs I never saw a horse that seemed in any way to be affected by the sight of the automobiles. It just seemed as if they had been accustomed to them for years. In view of this I am unable to see how it is that so many English drivers are hauled up in court to answer charges for having caused horses to run away, etc.

Great interest was aroused by the contest, and in many of the small Scotch villages, and sometimes considerable distances from Glasgow, we would see people scrutinizing the official program. These they had probably purchased at the exhibition, where they were on sale some time previous to the date set for the trials. This enabled outside interested parties to follow the test intelligently. Needless to say, as we passed through the various villages, we received enthusiastic welcome.

My first days' run was on an "Argy" voiturette, built by the Hozier Engineering Co. of Glasgow, and never have I enjoyed a ride more than I did that day. The weather was delightful, and our route lay through some beautiful scenery. After traveling for about three hours we espied "Auld Reekie" (Edinburgh) in the distance, the castle looming up in great shape. The car ran like a clock. It impressed me very much and I predict for it a large sale.

On the last day it was my fortune to be assigned to Car No. 13, which was a Mors 10-HP. I do not know whether there are any "13 Clubs" in Scotland, but I do know that in practically every town through which we passed some one was bound to shout something referring to our number, and as it was Friday, too, we were the butt of many of the Highlanders.

Too much cannot be said in praise of the excellent roads. Even when crossing the Campsie Hills, an exceedingly wild part, the mountain roads were fine. Each succeeding day seemed to bring better roads. Practically all we saw were macadam. It is one thing to build a road and quite another to maintain that road. Many many times did we pass gangs of men working away, and steam rollers were in great evidence.

As one drove along there he noticed at

were attended to. Instructions to the official observer were explicit, and his word when on the car to be observed was law. For instance, he could demand that the engine of whatever car had been assigned to him be started at a given time when leaving the storage station in the morning. He was expected to satisfy himself that the passengers carried averaged in weight what was called for, and if in any doubt there and then to weigh each passenger, to do which scales were provided.

In starting out each morning all watches were set by the clock which hung in the station, so there was no misunderstanding owing to differences in times.

It will not be possible to give in detail the "confidential instructions" to observers, but I may say that in addition to the official program, he (the observer) had to look out for a great many things the average outsider would never dream of.

It must be remembered that endurance and not speed was the point to be decided.

regular intervals recesses at the side of the road in which were kept stones already broken to a size adapted for macadam road building or repairing. Sometimes we would see one or two old men seated also within these recesses busy breaking the stones. Having the stone laid in this way it does not block the thoroughfare and insures a supply of material when it is desired to make repairs to the road near by.

After I had finished my visit to Glasgow I spent a few days driving through the county of Fife. There the roads were finer still. Positively, they were perfect dreams, and upon inquiry I learned that the roads of Fife are looked upon as the best Scotland can produce. It seems to me that could American owners of automobiles have such roads the popularity of the automobile to the average man or woman would be enormously increased. I know that in America there are sections where just as good roads as are in Scotland may be found, but one cannot travel several hundred miles in order to have a few days' touring over good roads.

The Scot is credited with being canny, and it certainly does look as though his attitude toward the autocar was not going to be very enthusiastic, certainly not as much so as the manufacturers have expected. I remember going into an optician's in Buchanan St., Glasgow, during the week of the trials, to purchase a pair of goggles. One of Glasgow's leading divines happened to be in the store. In the course of making my purchase it leaked out that I was one of those "automobile fellows." The gentleman in clerical garb turned to me and said in broad Scotch: "My gracious, what an awfu' warning against the motor car!" referring to the bedraggled, dirty and hideous appearance some of the competitors had presented the day previous, after the 100-mile run. Now there seems to be a good deal of feeling as to automobiling on the part of the Scotch people, and so far as can be ascertained it applies to Americans also to a considerable degree.

Before sailing for England I had read and heard of the great progress that had been made over there in automobile design, and I had looked forward to seeing a large number in the streets of cities like London, Manchester, Glasgow, Liverpool, &c. In this I was sorely disappointed. I spent three days in London, about thirteen in Liverpool, one in Manchester, seven in Glasgow. I am perfectly honest when I state that I saw more private automobiles in two days in and about New York than in all the time spent in the cities named. Of course I except those carriages assembled at Glasgow for the trials. I cannot account for this, but such was my experience.

What I did see, however, in larger numbers than in American cities, was heavy wagons capable of carrying loads of from 3 to 5 tons. A great many brewers use

such trucks. I also saw several in use by the Dock Board at Liverpool. However, the English builders do not seem to have developed nearly so much along that line as I had given them credit for. One firm in particular, who have had wagons entered several times in the trials carried out each year by the Liverpool Self-Propelled Traffic Association, I found had only built one wagon and were at work on the second. Some of them seem to work very slowly. Perhaps it is the old conservatism again.

It did not seem to me as the manufacturers were turning out as many carriages as we do here. While that may be true there is no doubt in my mind that the cars which are turned out are better samples of workmanship and calculated to give more satisfaction generally than is the case in America.

Extreme care is taken as to the quality of the materials used, etc. One shop, that of the Hozier Engineering Co. at Glasgow, has standardized a great deal and jigs are

used. Consequently it was exceedingly difficult to get reliable information on these points.

A great many people over there are under the impression that the only style of car built over here is that using steam. This I found not only among disinterested parties, but also those directly connected with either the sale or manufacture of carriages.

On the whole I think American manufacturers have good reason to be proud of what they have accomplished during the past three years. This opinion is based upon what I saw in England both in the shops and on the roads and on the fact that over there they had an earlier start.

J. J. S.

The Toledo Steam Truck.

This truck, which the American Bicycle Co. has recently started to manufacture, is of English origin, and was selected by the company's engineer, Mr. R. L. Morgan,



THE TOLEDO STEAM TRUCK.

used for very many parts of this machine. About 250 men are employed at this establishment.

Very much the same condition prevails in the automobile industry over in England as here. There does not appear to be such a great demand for cars as there might be. It is questionable if the future of machines for pleasure purposes will be a bright one.

I endeavored while there to obtain some reliable data as to the comparative cost of horse drawn and motor vehicles as used in delivery service. The trouble I experienced in doing this was similar in many respects to what is found here. In every instance those interested were unable to tell me. They did not know, or at least if they did, they were very reluctant to give it out. The large stores corresponding to the American department store do not usually have their own horses and wagons, but give the work into the hands of a teamster, to whom they pay a certain sum for the trucking of the entire establish-

after investigation of all the leading makes of steam trucks in England. The equipment includes a 20-HP. compound engine and water tube boiler, a feed water heater, Worthington duplex pump, and a tank injector so that water may be picked up by the roadside by means of a piece of hose. The truck is made in both platform and covered styles, the machinery being the same in both. Kerosene is the fuel, and with tanks filled the weight of the covered truck is about 10,000 lbs. The rated capacity is 3 tons.

The road race from Chicago to Joliet, Ill., which was the principal event of the race meet at the latter place, Oct. 18th and 19th, under the auspices of the Joliet Driving Club, was won by J. B. Burdette, in a Winton. Mr. Burdett's time was 1 h. 49 m. 18 s. There were fifteen entries, including two Panhards, belonging to Robt. and E. B. Shaw. Mr. Burdette is a member of the Chicago Automobile Club and was accompanied by his wife.

Fire-Tube, Water-Tube and Flash Boilers Compared:—II.

By Walter L. Bodman.

(Concluded from September issue.)

Briefly, a flash generator is a coil of piping with one inlet and one outlet, through which water is forced, turning into steam in its passage, and maintained at such a temperature that there can be no possibility of any water reaching the outlet except as steam. To ensure this result means must also be taken to baffle the internal passage and retard, or rather steady, the flow of the fluid, as anything approaching a free circulation is very undesirable. This coil is raised to a temperature not exceeding 900° Fah., and the first water to raise pressure for starting is injected by hand, subsequent feeding being arranged to work in ratio to the load requirement. A temperature above 900° Fah. will scale and deteriorate the tubes

Such ideal conditions must be paid for, and although experience and experiment will reduce materially the price to be paid, it cannot be honestly said that the flash boiler is yet a commercial automobile boiler, fit for general use and in unskilled hands. It will be readily understood that such a boiler is coarse in its working, and that it is extremely difficult to provide an indication to the driver of the state of his generator.

Requiring, as it does, to work between the temperature of 650° Fah., and at, as an extreme limit, 900° Fah., and bearing in mind that the specific heat of iron, which is small, is relied upon to equalize the load, it is evident that it is easy for the generator to be cooled into non-working or excessively heated to its own detriment and disaster to the engine and valves.

The regulation and working of this type is strictly thermometric; in no sense is

without any margin being established for inequalities of load, necessitates the carrying of a large and heavy boiler.

Constructionally, a serious difficulty is presented in the casing of a generator of high temperature. Such a casing and lagging is costly, often exceeding far the cost of the generator, heavy and liable to great depreciation in work.

The appended diagram of the working of a flash generator will convey an excellent idea of its points, and the following description of the manufacture may aid inventors desirous to test its quality and endeavor to improve its working to start fairly in their work.

A safe allowance for mechanical efficiency is to assume that 7 pounds of water per square foot of heating surface will be evaporated. A plain round tube will not be successful in working, as it will, as a hot coil, have poor efficiency, and offering no check to the violent action of the gen-

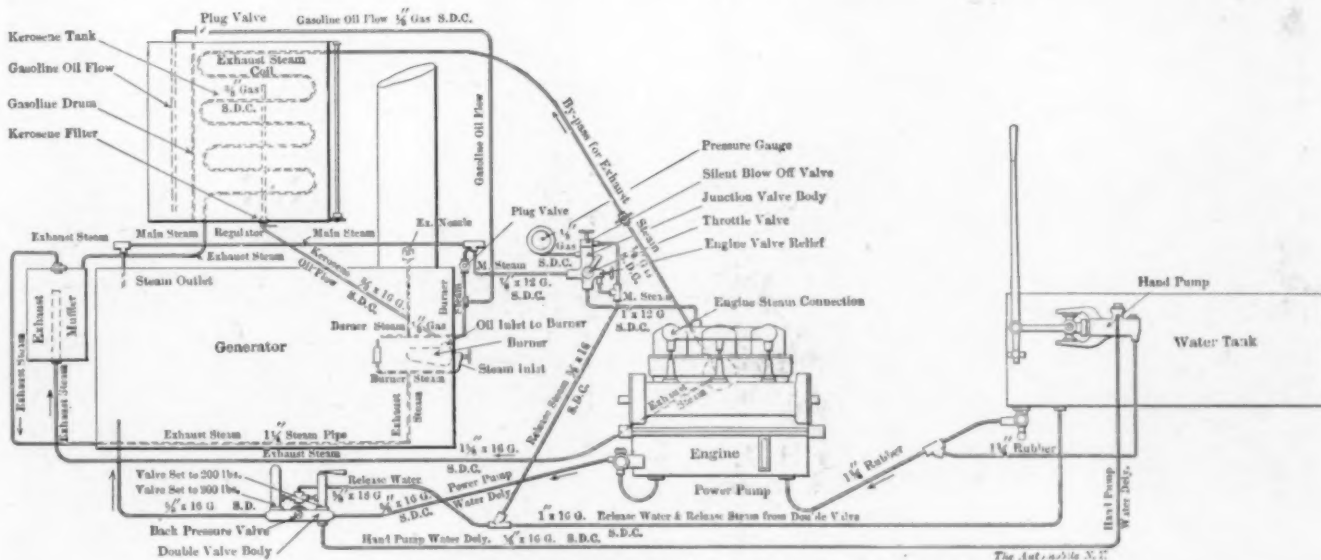


DIAGRAM OF CONNECTIONS FOR A FLASH GENERATOR.

This diagram illustrates a method for connecting up and regulating a fairly large Flash Generator, fired with kerosene. Gasoline is used to start the fire and get everything under way.

The feed-water delivered by the pumps passes through a double spring safety valve; the highest valve is a lockup valve; the lower can be varied. This is practically the regulation or control, workable by hand or by a thermostat M. S. regulator.

Some of the exhaust steam is kept constantly flowing through the kerosene, this being an even better way to obtain economy than heating the feed-water with exhaust steam.

and form steam of a temperature destructive to the engine and valves.

Such a boiler is ideally simple and absolutely safe, no volume of fluid able to flash into steam in event of a collapse being present. It is very cheap, cheap to construct, and in no way liable to derangement from the causes that can stop the working of a wet generator.

The quality of the water used is immaterial, the temperature at which the generator is worked rendering any solidification of deposit an impossibility. No gauge glass is required, and the writer has frequently driven for many days without a pressure gauge or any visible sign of the interior state of the generator. The quality of the steam is such that a water economy of 25 per cent. to 33 per cent. is obtained, and the velocity admits of the use of smaller pipes and valves.

the pressure an indication, nor can it be used successfully in the regulation of flash generators; and up to the present inventors have attempted to render these smooth in their working by establishing definite proportions between the quantity of fuel, when liquid fuel is used, and the quantity of water injected into the boiler.

Assuming that it is found by experiment that 1 pound of kerosene will evaporate 10 pounds of water at a certain temperature, it certainly looks feasible on paper to establish such a feed ratio as shall give an even and certain result in ordinary practice. But a very slight acquaintance with the vagaries of small pumps, even when new and in the best of condition, will dispel such hopes, whilst it is apparent that an arrangement that absolutely necessitates every ounce of steam to be generated as it is required,

erator, will cause "gulping" in its discharge. Some shape that will distort the section of the tube must be adopted, or the tube partially filled with some substance to give a like result, and on this a good deal of the mechanical efficiency will depend.

The diameter of the tube to be used is best obtained by laying out the area after distortion and providing a tube of such diameter that the distorted area shall be at least double the area of the main steam pipe to the engine. The thickness of the wall may vary, but approximately should be $\frac{1}{4}$ in. for every inch of internal diameter.

The form of coil will depend entirely upon the space to be occupied, and it is very desirable to have as few joints as possible. What joints there are must be instantly accessible and capable of tight-

ening when the generator is in operation, sudden changes of temperature being always liable to affect them.

The weight and thickness of the casing for this coil will vary with the fuel used, but the form best suited to the work is (1) an inner shell of firebrick or refractory material, closely fitted to the coil; (2) a hard steel plate case over this; (3) an air space about 1 in. wide all round this shell, with, if possible, the air to feed the fire drawn from it; (4) a light casing, lagged externally with asbestos and finally with ¼-in. thick hardwood.

The feed water will require a pump of at least double the average requirement, and its regulation can either be by hand, water being by-passed back to the tank when the pressure is excessive; or it may be regulated by a spring valve, and in this direction is a field for invention. The or-

The F. B. Stearns Gasoline Phaeton.

The latest phaeton model built by F. B. Stearns & Co., Cleveland, O., is shown in the accompanying illustrations.

The engine is of 6¼ by 7 inches cylinder dimensions, and rated at 11 HP. The crank shaft is extended beyond the fly-wheel, and carries planetary gears giving a slow speed and reverse by the tightening of the band brakes shown in Fig. 2. For the high speed a friction clutch connects the shaft with a sprocket pinion normally loose on it, and a brake acts on the clutch drum to stop the vehicle. From the sprocket pinion a chain transmits the power directly to the rear axle.

A sliding wedge limits the lift of the inlet valve, the wedge being shifted by a foot-button to the desired point, and this has the effect of throttling the engine. A



FIG. 1. THE STEARNS GASOLINE PHAETON.

dinary spring valve is too spasmodic, and closes too slowly; the requirement really is for a spring valve that will release gradually but close as rapidly at least as it lifts. A further improvement required is an accurate and quick recording instrument for temperature, which at the same time might be connected for automatic fire regulation.

In this connection the writer would remark that his experience has not greatly favored automatic devices. An intelligent human element will always exist in a working automobile, and provided the driver has accurate indications of his work it is generally better to leave regulation of devices to his judgment.

This can only be a brief indication of the construction of a superheated steam generator; details would require great amplification and illustration, but in closing the writer desires to express his absolute confidence in its future as the ideal means of generating energy for all classes of road transports. It is as safe as an electric car, as smooth and cheap as a steam car.

make and break spark is used, operated by a long cam with an angular rise, so that the centrifugal governor seen in Fig. 2, by shifting the cam along its shaft, varies the time of the spark.

The inlet valve is centrally located in the cylinder head, and the exhaust valve is below it and enclosed in the jacket casting. The vaporizer is of the float feed type and requires no adjustment.

A feature of the engine is the lubricating device, a multiple oiler being fed mechanically by the engine and in proportion to the speed of the latter. The water circulation is by pump, with cooling coils in front.

The frame is composite, of wood and steel, and rests on four full elliptic springs. Jointed reach rods connect the axles, and the wheels are 32-inch, wire-spoked, with 4-inch tires.

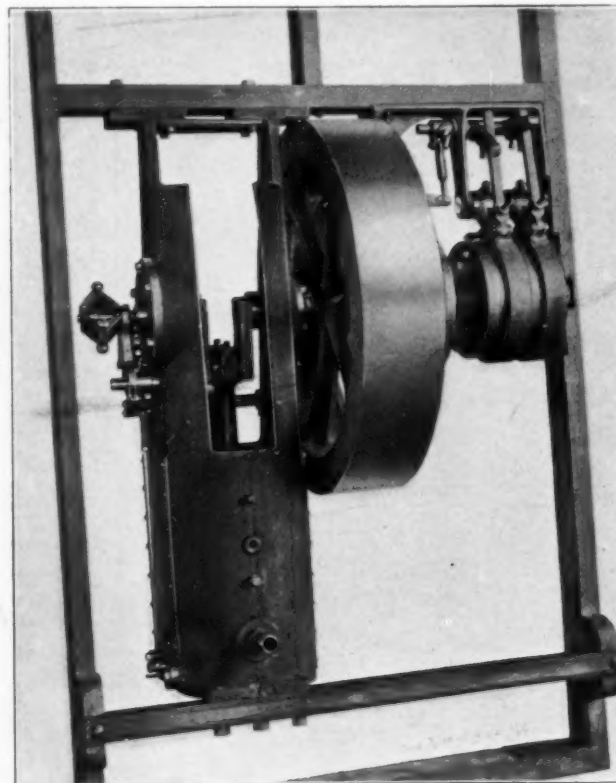


FIG. 2. ENGINE AND SPEED CHANGING GEARS OF THE STEARNS PHAETON.

Pan-American Awards.

The following awards have been made to automobile exhibitors in the Transportation section of the Pan-American Exposition, Buffalo:

Gold Medals.

Automobile Co. of America, New York.
De Dion-Bouton Motorette Co., New York.

Electric Vehicle Co. (two medals, for electric automobiles and for variety and completeness), New York.

Locomobile Co. of America, New York.
Mobile Co. of America, New York.

Silver Medals.

Baker Motor Vehicle Co., Cleveland, O.
Diamond Rubber Co., Akron, O.

Goodyear Tire and Rubber Co., Akron, O.

Haynes-Apperson Co., Kokomo, Ind.

Overman Automobile Co., New York.
Twentieth Century Mfg. Co. (lamps), New York.

Veeder Mfg. Co. (odometers), Hartford, Conn.

Woods Motor Vehicle Co., Chicago.

Bronze Medals.

Electric Vehicle Co. (gasoline runabout), New York.

Kidder Motor Vehicle Co., New Haven, Conn.

E. R. Thomas Motor Co., Buffalo, N. Y.

Honorable Mention.

Buffalo Electric Carriage Co., Buffalo.
Eastman Automobile Co., Cleveland, O.

Good Roads In New York.

By John Bethell Uhle, President of the Highway Alliance.

One of the most peculiar things about such good roads as there are in New York State, is the difficulty of finding their locality. In New Jersey, the State has published a map of the important through routes which have been improved—a map which exceeds in usefulness all so-called driving maps. In New York there is no such map possible, because the State does not have the material for such a map—broadly speaking, there is no record of road conditions, except where the roads have been improved recently under the Higbie-Armstrong law. The State authorities do not even know how many miles of road are yet to be improved, for there is no law authorizing a road list at Albany from which it can be said there are so many miles of roads in the State, so many sufficient now for local needs and used only for local purposes, so many needing only better care, so many requiring reconstruction, and so on. Whatever differences of opinion may exist about the value of statistics, especially concerning road repairs and surfaces, it will be found that the absence of such information indicates also the absence of any rational system of road management. To some persons this lack of system seems an assurance that all the roads will eventually be made perfect. For, they argue, such roads as are improved will be the result of voluntary action and will be so superior and so perfectly suited to their different localities as to be "object lessons." Such persons are, however, forgetful, else they would recall the turnpikes with stone roads for wet weather and heavy traffic, and the "summer" or dirt roads on the side for light traffic in dry weather. Turnpikes never were "object lessons" for good roads; they taught the stay-at-home doctrine of charging the traffic with the expense of its roadway.

Some have appreciated the lack of system in caring for the highways of New York State so much that their whole attention has been devoted to some theoretically perfect scheme headed by a State Highway Commission. But what is needed is not more officers or an elaborately graded system, but supervisory authority in the State Engineer's office. That authority would probably be best exercised in the way of advice, at first. At present every petty highway official (and there are one hundred thousand, probably, of them) manages his portion of the roads as he can. Recently, the men who fix the county tax-rates and allow extra repairs to highways, the county supervisors, have been meeting the State engineer once a year and have talked over methods of road maintenance, with the result that the individuals who attend these conventions are beginning to have a better understanding of many of the practical prob-

lems arising in the course of road management. These conventions are open to the public and ought to be attended by those who seek practical information. The men who actually care for the roads have not yet been reached, and county conventions of highway commissioners and overseers ought to be held for conference and imparting advice.

Too many good roads advocates are so disgusted with the present condition of the highways as to prefer an effort to abolish the whole hundred thousand highway commissioners and pathmasters, rather than an effort to separate the competent from the useless officials. This disposition generally appears in discussions of the method of abolishing the labor system. But pathmasters and highway commissioners under some name must always exist, and the sooner the competent are divided from the lazy and indifferent, the sooner will the real defects of the labor system be made apparent to all.

There is no longer any need to demonstrate in New York State that good roads are valuable. The substantial objection to good roads is their cost, beginning with the improvement of the road and never ending. The intelligent advocate of good roads will point out that good roads need good care and that good care can only be had by economical and orderly management. There is not much use of prophesying increased values of land, for most landowners are acute enough to recognize the meaning of increased valuation—that is, increased taxes. It is the convenience and comfort of a good road with definite assurance of the reasonableness of its cost that will most surely prevail. The question of cost is the greatest in every community, and, of course, must be met by definite information in place of oratorical platitudes. There are country regions which tax themselves to improve their roads that a new population may be attracted, and there is generally a more intelligent apprehension of the value of good roads than is believed. Nothing but definite information will aid the cause of good roads in most places in this State.

For a Long Island Race Course.

The Automobile Racing Association of the State of New York is the name of a new syndicate, headed by Mr. A. J. Lukens, 173 Broadway, whose announced purpose is to construct a course for automobile tournaments on Long Island. It is proposed to build this course at Syosset, and it will consist, according to plans now drawn, of three tracks, one for speeding, another for rough riding contests, and another for hill-climbing and coasting. It is recommended that the oval for speeding be made two miles in circuit, of width sufficient for several vehicles to travel abreast, and with the turns banked.

A Fatal Automobile Accident.

Frederick H. Benedict, the well-known New York broker and son of Commodore E. C. Benedict, was the victim of a shocking fatality at Tuxedo Park, N. Y., on Oct. 19th, in which Mr. Benedict was instantly killed, and Granville Kane, a guest in the same vehicle, sustained a broken rib and arm, besides some internal injuries as well. At the time of the accident Mr. Benedict and Mr. Kane, with Mr. Benedict's chauffeur, were driving over the mountainous road between Tuxedo and West Point. They, together with Mrs. Benedict and Miss M. Knowlton, had been invited by Major J. B. Bellinger of West Point to visit the football game at the latter place that day, and the ladies had driven over to West Point early in the day. Mr. Benedict and Mr. Kane, starting later, expected to join them at West Point in time for luncheon. A thunderstorm came up meanwhile and made the roads wet and slippery, but the trip was successful until the descent over East Mountain, near Stockbridge, was begun. Although details at this writing are somewhat meagre, it is believed that Mr. Benedict, who was driving, undertook to go down hill too rapidly on the slippery surface, and, approaching some obstruction, applied the brake too suddenly, with the result that the machine skidded. At all events, it escaped control and crashed into a pile of rocks beside a stone breakwater at the roadside, where it turned turtle. Mr. Benedict, wrapped in a carriage robe, was unable to save himself, and was pinned under the machine. The chauffeur, who sat beside him, escaped by jumping, while Mr. Kane, on the rumble, was flung on the rocks, and escaped with the injuries described.

Mr. Benedict himself fell with his chest under a portion of the machine, whose weight made it impossible for him to breathe, and, although the two survivors made heroic efforts to extricate him, it was not till other assistance came that this could be done. Mr. Benedict was still living, but before medical assistance could be obtained he had died. Mr. Kane's injuries proved not serious, and he is rapidly recovering.

The machine which Mr. Benedict drove was a Gasmobile, and it is possible that the skidding was provoked by an accidental use of the emergency brake pedal which acts on the rear wheels without releasing the clutch, instead of the regular brake pedal, which disengages the clutch before stopping the machine. The machine was in perfect order, and the accident must be attributed to recklessness in driving.

The fourth international automobile, cycle, and sporting exposition will be held in the Grand Palais, Champs Elysses, Paris, from the 10th to the 25th of December. This exposition is the great event of the year in France, and draws every manufacturer of prominence.

Straightaway Mile Records in Brooklyn

The first American race meet over a straightaway mile course will take place from 1 to 5 P. M. on the 16th of this month on the well known Ocean Parkway, Brooklyn, under the auspices of the Long Island Automobile Club. The course includes a mile for starting, one mile for the record, and about one-half mile, if necessary, for slowing down. The road is straight and level, and perfectly smooth, and is ordinarily devoted to use as a speedway by Brooklyn horsemen. It is about 200 feet wide, and is flanked by roads for ordinary uses on both sides. The plan as approved by Commissioner of Parks George V.

Brower, is to use the speedway portion and keep the side roads open. Preceding the races an automobile parade will take place, starting near the City Hall, Brooklyn, and proceeding via Prospect Park to a point near King's Highway, where the starting line will be.

Eight events have been arranged for as follows:

CLASSES AND EVENTS.

1. Motor Bicycles.
 2. Motor Tricycles.
 3. Gasolene, under 1,000 lbs.
 4. Gasolene, over 1,000 and including 2,000.
 5. Gasolene, over 2,000.
 6. Steam.
 7. Electric.
 8. One-Mile Championship Race.
- Open to winners in each class, showing 1.30 or better. To be run in trials and a final if necessary.

The winner in each class given above to be eligible to compete in the final provided the time made for the 1-mile is 1:30 or better. All events are to be run under the racing rules of the Automobile Club of America. The L. I. Automobile Club is to award cups to the winner in each class and a special cup, known as the L. I. Automobile Club cup, for the winner of the open championship race.

Automobile racing men are enthusiastic over the prospect of being able to establish straightaway mile records for all classes of vehicles, and, besides the familiar American machines, it is expected that all the leading owners of foreign racers, as well as Fournier, Charron, and other Frenchmen in this country, will seize the opportunity to show what they can do.

NEW STYLES OF AUTOMOBILES

The "Crestmobile."

This little gasoline runabout has undergone several changes since its first appearance, and the latest model is shown in Fig. 1. The motor, an air-cooled "Crest," rated at $3\frac{1}{2}$ HP., is carried on the front axle, and a chain transmits the power to the speed changing gears, from which another chain runs to the differential on the rear axle. The underframe is jointed for flexibility, and the gear case, which is carried on the reaches, is attached thereto by universal joints. No machinery is carried in the body, the springs of which are therefore made very flexible. The gear changes are effected through clutches, operated by a short lever at the top of the steering post, and the motor speed is regulated by shifting the spark. The gasoline tank is under the seat.

The wheel base is 57 inches, and the tread 45. Twenty-eight inch wheels, with heavy motor tires, are fitted. The design of the rear axle is noticeable as a strictly rational disposition to resist stress. The Crest Mfg. Co., 83 Portland St., Cambridge, Mass., are the makers of this runabout.

The Haynes-Apperson Phaeton.

The most recent model of this well-known carriage is shown in Fig. 2. It is equipped with an 8-HP. engine of two opposed cylinders, and has the standard Haynes-Apperson three-speed transmission, as described in THE AUTOMOBILE last May. Aside from the up-to-date outlines of the body, one or two new mechanical features have been introduced, notably the use of a gear pump and cooling coils, the latter being located within the contour of the prow or scoop in front. This arrangement renders the outside tanks formerly used unnecessary. The weight of this carriage is about 1,900 pounds with all supplies. It has 36-inch wheels with 3-inch tires and Sarven hubs.

The "Reading" Steam Surrey.

This carriage, which the Steam Vehicle Co. of America, New York, has lately added to its line of vehicles, is built on substantially the same lines as the "Reading" stanhope. The gasoline tank is under the rear footboard, and the space under the front seat is available for tools, etc. The regular single lever throttle is used, which reverses the engine in its back position, and the by-pass, like the throttle, is operated from inside instead of outside the arm of the front seat. The two valves seen outside are respectively the gasoline and the auxiliary throttle valves.

The Riker Hansom Cab.

A hansom cab of up-to-date design is that shown in Fig. 4, which represents one of the latest productions of the Riker branch of the Electric Vehicle Co. It has two motors of 2 HP. each, and forty cells of battery. The tread is 54 inches, and the wheel base is much longer than in most electric cabs, being 89 inches. A parcel box takes the place of a dash. The wheels are 36-in. front and 42-in. rear, with 3-in. solid tires. The maximum speed is 12 miles per hour, and the total weight is 3,510 lbs.

The furnishings are very complete, and include an inside light in a dome fixture, and two mirrors, a speaking tube, and side pockets.

The Locomobile Touring Wagon.

This carriage, which is illustrated in Fig. 5, is specially designed for country touring, and is therefore of more substantial build and greater power than the stanhopes of the same make, and has considerably larger tank capacity. The running gear is made extra strong, and the rear axle is made with both vertical and horizontal arches, both braced by

struts at each side of the differential. The boiler and engine are of the standard design, but enlarged, the former having 54 sq. ft. of heating surface and the latter having cylinders 3 by $3\frac{1}{2}$ in. ball bearings with extra large balls, are used throughout.

The gasoline tank is located in the box which takes the place of the dash, and it holds 24 gallons. As it would be very onerous to pump up air pressure in a tank of this size, the gasoline is not kept under pressure in the tank at all. Instead, a pump on the engine forces the gasoline through a sealed pressure cup, partly filled with air to maintain a steady pressure. To start the pressure, a few strokes of a hand pump are used. Besides the regular feed water pump on the engine, an independent steam pump is added, which can pump water or inflate the tires. The water tank holds 45 gallons.

A cylinder oiler holding 1 1-3 pints is fitted to the engine, one filling sufficing for a considerable time. The wheels are 28 inches in diameter, with 4-inch tires, and have an extra long base of 73 inches.

The manufacturers, the Locomobile Co. of America, New York, expect to show one or more of these carriages at the Madison Square Garden show.

A Special Gasmobile.

In Fig. 6 is illustrated a special design of Gasmobile phaeton with rumble seat, in which the special features of the Gasmobile surrey, to wit, wheel steering, speed changes by sliding gears, and two-chain drive with fixed rear axle, are applied to the phaeton model. The sloping bonnet of perforated sheet metal, which covers the machinery at the rear, is now a standard feature of the regular phaeton. The particular machine illustrated is the property of Mr. J. F. D. Lanier, who has taken it abroad for use in touring.



FIG. 1. THE CRESTMOBILE RUNABOUT.

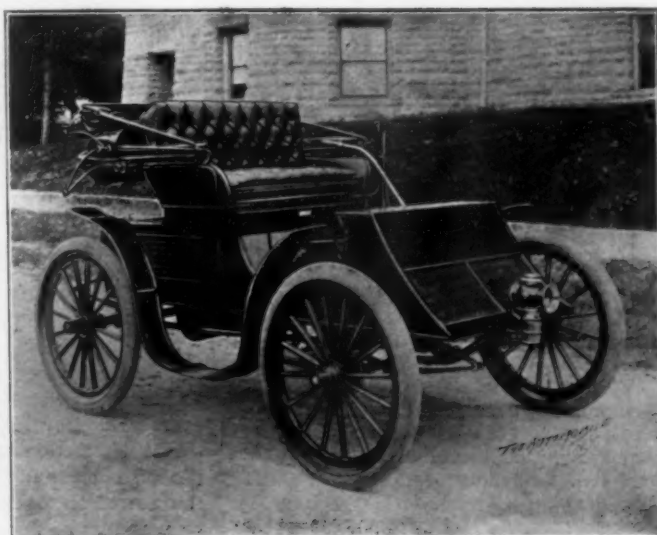


FIG. 2. THE HAYNES-APPERSON 8-HP. PHAETON.



FIG. 3. THE READING STEAM SURREY.



FIG. 4. THE RIKER HANSOM CAB.



FIG. 5. THE LOCOMOBILE TOURING WAGON.

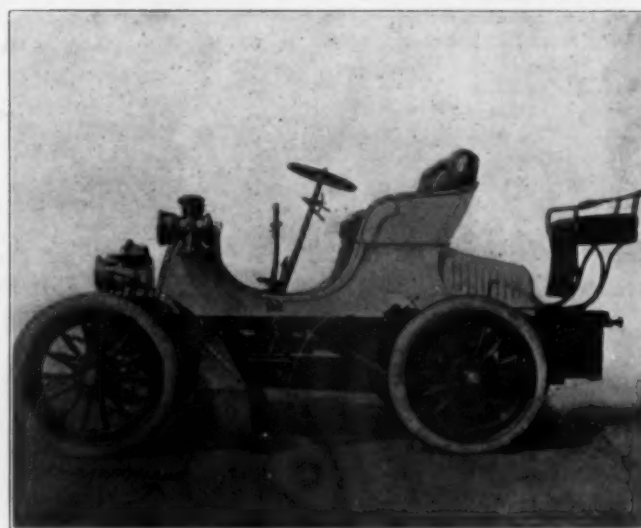


FIG. 6. THE "GASMOBILE SPECIAL" PHAETON.

NEW STYLES OF AUTOMOBILES.

CLUB NEWS AND VIEWS

Club Directory.

Automobile Club of America, S. M. Butler, Acting Secy., 753 Fifth Ave., New York City.

Automobile Club of Baltimore, W. W. Donaldson, Secy., 872 Park Ave., Baltimore.

Automobile Club of Bridgeport, F. W. Bolande, Secy., 49 Cannon St., Bridgeport, Conn.

Automobile Club of California, R. R. l'Hommedieu, Secy., San Francisco, Cal.

Automobile Club of Cincinnati, R. H. Cox, Secy., Cincinnati, O.

Automobile Club of Columbus, C. M. Chittenden, Secy., Broad St., Columbus, O.

Automobile Club of Maine, Henry M. Jones, Secy., Portland, Me.

Automobile Club of New England, Geo. E. McQueston, Secy., Brookline, Mass.

Automobile Club of Rochester, Fredk. Sager, Secy., 66 East Ave., Rochester, N. Y.

Automobile Club of Syracuse, Frederick H. Elliott, Secy., 515 S. A. & K. Building, Syracuse, N. Y.

Automobile Club of Utica, Jas. S. Holmes, Jr., Secy., Huron Building, Utica, N. Y.

Bloomsburg Automobile Club, C. W. Funston, Secy., Bloomsburg, Pa.

Buffalo Automobile Club, Ellicott Evans, Secy., Lenox Hotel, Buffalo, N. Y.

Chicago Automobile Club, H. M. Brinckerhoff, Secy., Monadnock Block, Chicago.

Cleveland Automobile Club, Windsor T. White, Secy., Cleveland, O.

Columbia College Automobile Club, Lewis Iselin, Secy., Col. College, New York.

Dayton Automobile Club, E. Frank Platt, Secy., Dayton, O.

Herkimer Automobile Club, W. I. Taber, Cor. Secy., Herkimer, N. Y.

Hudson County Automobile Club, F. Eveland, Secy., Jersey City, N. J.

Indiana Automobile Club, August Habisch, Secy., Indianapolis.

Long Island Automobile Club, L. A. Hopkins, Secy., 1190 Fulton St., Brooklyn, N. Y.

Massachusetts Automobile Club, L. E. Knott, Secy., Ashburton Pl., Boston.

New Bedford Automobile Club, E. G. Watson, Secy., New Bedford, Mass.

New Jersey Automobile Club, Dr. H. Power, Secy., Upper Montclair, N. J.

North Jersey Automobile Club, E. T. Bell, Jr., Secy., Paterson, N. J.

Philadelphia Automobile Club, Frank C. Lewin, Secy., Hotel Flanders, Phila., Pa.

Pennsylvania Automobile Club, H. J. Johnson, Secy., 138 N. Broad St., Philadelphia.

Rhode Island Automobile Club, F. A. Fletcher, Secy., 42 So. Water St., Providence.

San Francisco Automobile Club, B. L. Ryder, Secy., San Francisco, Cal.

St. Louis Automobile Club, John Ring, Secy., St. Louis, Mo.

Troy Automobile Club, J. S. Thiel, Secy., Troy, N. Y.

Worcester Automobile Club, H. E. Shel-land, Secy., Worcester, Mass.

A State League in Ohio.

The Ohio Automobile Association was formed at a meeting on Wednesday, Oct. 23d, of representatives of the Cincinnati, Cleveland, Columbus and Dayton clubs at the Chittenden Hotel in Columbus. Its objects as set forth in the constitution adopted are as follows:

"The promotion of an organization composed of persons owning self-propelled pleasure vehicles for personal use, to co-operate in securing proper, just and rational legislation and the formation of proper rules and regulations governing the use of automobiles in city and country; and to maintain the lawful rights and privileges of owners or users of all forms of self-propelled vehicles whenever and wherever such rights and privileges are menaced: the encouragement and development in this State of the automobile: to promote and encourage in all ways the construction and maintenance of good roads and the improvement of existing highways, and generally to maintain an association devoted to automobilism."

The association will comprise within its membership all persons of legal age who are owners or users of automobiles in the State of Ohio. The representatives present at the Columbus meeting were Reuben A. Holden, Jr., President of the Automobile Club of Cincinnati, Howard S. Rodgers, Captain, and Rutherford H. Cox, Secretary of the same club; E. L. Strong, President, George L. Weiss, and R. W. Slusser of the Automobile Club of Cleveland; President Oscar Lear, Secretary C. M. Chittenden, Dr. E. F. Wilson and E. C. Morton of the Columbus Club; and President Carl F. Baumann, Captain Frank P. Hilt, Earl Kiser, and Dr. Bowman of the Dayton Automobile Club.

The Dayton representatives rode up to Columbus from Dayton in three automobiles, covering the distance of seventy-five miles in about five hours. They reported that they found good roads along the route, had a pleasant ride and experienced no difficulties.

The representatives took dinner at the Hotel Chittenden, and in the evening were the guests of the Columbus Automobile Club for a ride out to the Country Club, where supper was served.

The officers elected for the ensuing year are: President, E. L. Strong, of Cleveland; Vice-President, Dr. Bowman, of Dayton; Secretary and Treasurer, Rutherford H. Cox, of Cincinnati; and Howard S. Rodgers, of Cincinnati, Major Henry M. Neil, of Columbus, George L. Weiss, of Cleveland, and Carl Baumann, of Dayton, members of the Executive Board.

In consequence of the alleged recklessness of New York automobilists in the streets of that city, the Municipal Coun-

cil lately adopted a resolution calling on the police to enforce more strictly the speed laws now on the statutes.

Consolidation Again in the Air.

The project on foot last spring for consolidating the automobile clubs of New England and Massachusetts, which came to a standstill before the summer opened owing to the inability of the committees to get together a quorum, now appears to be in a fair way of accomplishment. Both clubs have held well attended meetings to consider the subject, and committees have conferred and are understood to have settled the principal questions involved. By the amalgamation the clubs will jointly use the new house being erected by the Massachusetts club on Boylston St., and the furniture and fittings of the New England club's house at Brookline.

An Experience Meeting of the A. C. A.

The regular Tuesday evenings of the Automobile Club of America opened on Oct. 22d, with an "Experience Meeting," at which various members discussed the endurance run and the lessons to be learned from it. Interesting addresses were made by Messrs. W. E. Scarritt, President Shattuck, C. J. Field, Harlan W. Whipple, J. Dunbar Wright, A. C. Bostwick, and others. Extracts from Mr. Scarritt's and Pres. Shattuck's addresses are given elsewhere in this issue.

Automobile Club of Utica.

The Automobile Club of Utica, N. Y., has been organized with a membership of twenty-six. Constitution and by-laws have been adopted and permanent club rooms have been engaged in the Huron Building. The officers are as follows: President, C. S. Mott; vice-president, A. J. Seaton; treasurer, Saml. Campbell; secretary, James S. Holmes, Jr.

Among the new members of the A. C. A. the names of Harry Payne Whitney and W. C. Greene are noticeable. The former is a son of William C. Whitney and a graduate of Yale. Mr. Greene is a Montana copper king, now resident in New York. He recently purchased the 40-HP. Panhard which finished third in the Paris-Berlin race.

The Massachusetts club has given a cup to the Rhode Island Automobile Club to express its appreciation of courtesies extended to the Massachusetts club on the occasion of its run to Sharon, June 17th.

Correspondence.

Space will be given on this page to letters concerning the Automobile, its operation or construction, to accounts of tours or runs, routes of travel, good roads, etc. When requested by correspondents their names will not be published, but must always be given in the communication to the Editor.

A Possible Error.

Editor THE AUTOMOBILE:

Would like to say in answer to "Observations By A Passenger," signed "H. L. T.," that we think he was a little mistaken about the Grout stanhope being pushed up hill, as it never was, and we will forfeit \$1,000.00 for any hill between New York and Buffalo that our carriage cannot go up in its worst condition on this route. We do not understand how he got the news, and we do not think it just right for him to make up such things, and we wish to correct same. In looking up the summary of hill climbing contest where we won in Class "A," we notice our time considerable less than the vehicle "H. L. T." rode in.

Yours respectfully,

Grout Bros.

Orange, Mass., Oct. 12.

Among the entries in my note-book for the Tuesday afternoon in question I find among the numbers of other vehicles jotted down as "B 4" passed or was passed by them, the item "45 stuck on grade." It is possible, of course, that I read the number wrong, or the vehicle may have been stopped for some other reason than to get up steam. It would, however, have been nothing to the discredit of any vehicle, if, coming suddenly on one of the short but steep ascents which abounded in the first half of that afternoon's run, its operator had had to wait a little to get pressure enough to take him up, or, not caring to wait, had pushed. I did not identify the vehicle beyond the number, and do not at this date recall whether it was standing or being pushed.

Herbert L. Towle.

Not a 16-Inch Boiler.

Editor THE AUTOMOBILE:

We refer to the Steam Carriage Protest (Class A) in the Oct. issue of "Automobile," p. 244, written by a party connected with another steam carriage concern, wherein he says, "Grout Brothers carried a 16-inch boiler." Will say that we carried a 14-inch boiler made by ourselves, and that we never made or used a 16-inch. This carriage which won the hill contest was immediately put on exhibition at the Pan-American Exposition, where it may be seen at any time. There were eight carriages made by the firm above referred to, entered in this contest, of which four were in our class, three by the company direct (this being the limit in each class) and the fourth one by their demonstrator. Still they were beaten as they simply did not have the wagons to get there. We have the cup, which is a very nice one.

Grout Bros.,

Orange, Mass., Oct. 25.

C. B. Grout.

Two New Lane Vehicles.

In Figs. 1 and 2 are illustrated two new models of steam carriages lately brought out by the Lane Motor Vehicle Co., Poughkeepsie, N. Y. In the mechanism these machines embody substantially the same features as are found in the Lane surrey which was illustrated in THE AUTOMOBILE last July, and which made a creditable showing in the New York to Rochester endurance run. Among these are a new type of burner constructed entirely of tubing and so arranged that air is supplied on each side of the gas flames, thus permitting very rapid combustion. The burner has a pilot light which burns with a blue flame, and there is but one valve to operate when firing up.



FIG. 1. THE LANE STEAM RUNABOUT.



FIG. 2. THE LANE STEAM DOS-A-DOS.

The engine is encased and uses splash lubrication. Ball-bearings are entirely discarded in it. Other features are a power air pump which automatically maintains the air pressure, and a feed water heater.

Fig. 1 shows the runabout, with the gasoline tank in the front box and the water tank back of the boiler. Another type of this machine has the water tank forward and the seat a little further back. Fig. 2 shows the dos-a-dos machine, on practically the same lines as the runabout. The engines of both machines have 3-inch cylinders.

Non-Stop Runs in the Glasgow Reliability Trials.

The following vehicles went through the runs of the Glasgow reliability trials, covering five days, with no stops for any reason: Argyll voiturette, 8 HP. Arrol Johnston 6-passenger car, 10 HP. Mors, and 9-HP. Napier. The 4½-HP. De Dion voiturette lost but two marks, and the 16-HP. Milnes only one.

The Practical Automobile.

By Dave H. Morris.

Automobilism has made great progress in the last few years. It used to be looked upon as a sport more or less exclusively indulged in by rich Frenchmen; in a half dozen years it has developed into a world-wide necessity. The only incentive to own an automobile used to be to rush through space at a high rate of speed, irrespective of noise, vibration, danger or expense; at present this is quite different. That was when automobilism was in its infancy; when it was largely experimental, and had not found its place. It was a new toy, and, like all new toys, it invoked the prejudices of law-abiding citizens. Now, however, automobilists are beginning to realize that there are other pleasures in their machines than terrific speed, and with this realization is coming a new point of view, not only to them, but also to the public. The Runs of the Automobile Club of America have done much to educate both the public and chauffeurs, so that wherever automobiles are in the habit of going, former distrust has changed into confidence, and enmity has given place to friendliness. Of course there are some chauffeurs who still only find pleasure in terrific speed, and sometimes there are citizens who continue to feel the same old prejudice; but progress is slow, and we know there are those who refuse even now to use the telephone.

Although far from being a perfect machine, the automobile generally speaking is more reliable for the work of a horse than is the horse. The reason it is called unreliable by many, is because it fails to do what it was not intended it should do. It is not perpetual motion. It is a machine, and requires care and skill.

To show that I have the greatest faith in automobiles and believe they are right now more efficient and more satisfactory than horses, I can only say that I have discarded my carriages and trotting horses, and am replacing them by appropriate automobiles.

Automobile Regulations in France.

Automobiles weighing more than seven hundred pounds must be furnished with reversing gear. Those of a higher speed than thirty kilometres an hour must have special licenses, and their drivers must pass a more rigid examination than heretofore. All automobiles must carry large numbers prominently displayed back and front.

Races are not forbidden, the law requiring, however, the consent of two-thirds of the population of every town and hamlet traversed. Such consent must reach the Ministry of the Interior through the prefects of the departments a fortnight prior to a race. Then the Ministry will issue a permit.

A speed higher than thirty kilometres will be allowed only in the open country; elsewhere it must not exceed twenty.

The Automobile

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The December issue of THE AUTOMOBILE will be especially distinguished by full descriptions of the new types of vehicles exhibited at the Madison Square Garden show. Important changes have been made by a number of manufacturers in their machines, and many of these will come before the public at the show for the first time. THE AUTOMOBILE will contain complete and trustworthy accounts of everything new.

The Madison Square Garden Show.

There is every prospect that the conspicuous success of last year's show, under the auspices of the A. C. A., will be repeated this year. All or practically all of the space is taken, and the list of exhibitors is a thoroughly representative one. The Madison Square Garden show is the one show of the year from which no manufacturer who is ready to actually take and fill orders can afford to be absent, and all the important firms are to be found there. By reason of the cosmopolitan character of New York, this is much more true, in the automobile industry, than in the case of the Pan-American Exposition. Automobilism has made great strides in public recognition in the past year, and the character of the show and of the exhibits themselves will reflect these advances. As a synopsis of the state of the industry in this country, no one can afford to miss what will there be seen.

A Boon to Tourists.

The movement for a better road from Nelson Hill to Garrison is one of joyful import to every automobilist in Eastern New York State, and it deserves the cordial and substantial support of every one of them. So long as Nelson Hill continues to loom up before the tourist northward from New York, few of his kind will emerge from the belief that Peekskill is the natural terminus of his excursions. With that formidable acclivity no longer in his path, the way will be open for useful agitation in behalf of improved roads elsewhere on the route. Best of all, automobile touring between New York and Albany will receive an impetus such as the same outlay could secure in no other way. We are glad to know that Mr. William C. Osborn, to whom the new road around Nelson Hill is primarily due, does not intend to stop there, for there is crying need of both a wider road and a stone surface for some two miles at least north of the hill. Unfortunately, that locality is so sparsely settled that there is little likelihood of road improvements going beyond strictly local needs, except through the contributions of tourists and others benefiting by them, and we trust that President Shattuck will meet with a hearty response to the call for contributions. There is no good reason why the road from New York to Albany should not rank with the finest of American touring routes.

The Place For the Pump.

One of the small points which is sometimes slighted in gasoline vehicle design is the relative location of the water tank and pump when forced circulation is used. If there were such a thing as a satisfactory non-leakable pump, it would be quite proper to place the pump, as is frequently done, on the engine, and to put the tank below the body, in space that cannot be otherwise utilized. Unfortunately the nearest thing to a non-leaking pump is the plunger variety with check valves, which by common consent has been ruled out of the running on account of its bulk and slow action and the uncertainty of its valves. There remain only the centrifugal pump, most commonly used in France, and the rotary or gear pump. Neither of these can be made water-tight as a check valve is water-tight—so that no water whatever can get through it in the wrong direction—and the centrifugal pump in particular is several removes from positive action. It establishes a pressure, and that is all.

Neither of these pumps, if placed above the water tank, can be depended on with certainty to suck the water up to its own level. The centrifugal pump in particular is wholly useless under such conditions, because if it once gets dry it must be primed before it will start; but the gear pump is by no means free from the same failing, and, even if fairly tight when new, it will wear leaky with use. There are various ingenious devices in use for indicating whether the water is or is not flowing properly; but the only sure way to avoid trouble with the circulation is to put the pump lower than the tank, or the tank higher than the pump. Then the pump will always be primed so long as there is water in the tank.

In Union Is Strength.

The formation of the Ohio Automobile Association on Oct. 23d is a step in the direction which we may expect to see followed by many other clubs at no distant date. THE AUTOMOBILE was among the first to advocate the combining of local clubs into state or national organizations, and it is certain that their influence will be much more effective thus than can possibly be the case so long as they act separately. We may expect to see the example of the Ohio clubs followed by many others, and much good result therefrom.

The Glasgow Reliability Trials.

One feature of the "Reliability Trials" at Glasgow last September was deserving of more notice than it received in the press. This was the fixing of a time limit of thirty minutes for filling tanks, oiling, and adjustment or repairs, after each day's run. As will be remembered, each day's run started from and ended at Glas-

gow, and at the end of each the cars were taken to a storage building and left untouched for the night. The next morning half an hour was allowed for cleaning the carriage work, and another half-hour for filling and repairs. To exceed this time subjected the vehicle to a deduction of one mark per minute for the time thus spent, from a "perfect" of 300 marks for each day. The same penalty was imposed for stops en route (except those on account of traffic or tires or for luncheon), and the provision of an official observer on each of the thirty-odd vehicles insured the recording of every stop.

By reason both of the smaller number of contestants and of the fact that there was but one "night control" for the five days, the task of the A. C. G. B. I. was a much easier one than is ever likely to confront the Automobile Club of America; but the point we wish to make is the striking fact that it was deemed feasible, by the club and by the contestants as well, to allow unpenalized no more than a bare half hour a day for all work on the vehicles other than washing; and this after runs of a hundred miles or more, and for five consecutive days. It is true that the roads were good, and that speeds of ten or twelve miles per hour were discouraged as much as possible; but the facts as they stand are sufficiently noteworthy. They indicate, for the near future if not already, a virtual elimination of that large class of what may be called spontaneous derangements, due less to the vehicle's speed than to initial defects of design, which with the gasoline vehicle especially has been the curse of the early stages of automobilism. How many American makers of vehicles, we wonder, would stand a similar test? Assuredly some of them would pass with ease one even harder; but, taking American machines by and large, we still have something to do before we can give "points" in reliability to our European cousins.

A Matter of Taste.

"Anything but luxurious carriages. . . . About as handsome as a shunting engine in a railway freight yard." Thus does the esteemed Buffalo Express stigmatize the fast machines of Pres. A. R. Shattuck and David Wolfe Bishop, on the occasion of their appearance in the Rainbow City after the endurance run. The esteemed Express should remember that machines of thirty horse-power, or even of twelve, are not built for the boulevards, and that, amongst racers, handsome is that handsome does. We do not approve of betting—even on Seth Low—but we should like to lay a good cigar that a vehicle built to meet the Express's views on style and luxury would need a horse to make it go.

Progress of a Practical Kind.

A remark which we are glad to believe is as representative as it is significant is that of Mr. Dave H. Morris in the concluding paragraph of his article on "The Practical Automobile", on another page. The automobile has a gladly acknowledged place as an instrument of recreation, and that it would always enjoy even were it never to supplant the horse. But when we find it actually taking the place of "man's best friend" we cannot help declaring that it has made a long step further towards the practical. Let us hope for the time when it will reign as securely in the cities as it now does just outside of them.

Where Haste Is Folly.

The shocking death of Mr. Frederick H. Benedict, reported in another column, draws attention most forcibly to the danger of high speed where the surface is conducive to skidding, and especially on a down grade where either a skid or a failure to brake properly puts the machine absolutely out of its driver's control. It is quite possible to navigate both long and steep descents successfully on a slippery road, but to do so the driver must go his very slowest, avoiding abrupt checking of the machine altogether, and be prepared at any instant to turn the machine into the bank at the first sign of a skid.

Through a piece of carelessness for which we gladly apologise, the illustrations accompanying the article on "Some European Transmission Gears," in our September and October issues, were not credited to their source, The Automotor (London), by whom they had been redrawn from the wash drawings used by Mr. Austin.

Convention of the N. A. A. M.

The first annual convention of the National Association of Automobile Manufacturers will take place on Tuesday and Wednesday mornings of the week of the Madison Square Garden show, in the assembly room of the Garden. The meetings, which will be held from 10 to 12 o'clock of each day, will be open to the public, and the committee in charge promises an interesting program of addresses. Among the subjects to be discussed are: The National Association, Protective Tariff and Under-valuations, Legislation, Transportation, Commercial Gasoline, Wheels, Steel Tubing, Tires, Races, Good Roads, Prices and Discounts.

The annual meeting of the association for the election of the executive committee men will be held in the same place at 8:30 P. M. on Thursday, Nov. 7th, following which will be a dinner. It is hoped that ex-President Eddy of the Chicago Automobile Club, whose witty speech on the same occasion last year is so well remembered, may be induced to speak.

President Shattuck on Skidding.

At the "experience meeting" of the A. C. A., Oct. 22, President A. R. Shattuck described as follows his experience with his 12-HP. Panhard during the wet weather that prevailed for three days:

I think I was aided very much indeed by the fact that the car I was driving had a very long wheelbase, and my mechanic sat on the foot-board. That threw rather more than half the weight of my car on the front, leaving the weight on the rear wheels I think rather less than half. I found that my car skidded very little. I was careful never under any circumstance to put the brake on. In going down hill I always approached the brow of the hill at a very slow speed. I put my brake upon the two rear wheels and went down at perhaps four or five miles an hour, very gently. I found that when there was a little tendency to skid, when the tail of my car would spring out on the right-hand side, if I turned the steering wheel a little so that the front wheels would turn towards the right in the direction in which the skid was, the skidding could be stopped. I also found that I had a tendency to turn my steering-wheel a little too much under those circumstances, and thus a skid to the right suddenly became a skid to the left, and if I turned too much to balance this skidding I skidded in the opposite direction badly. It took me quite a time to learn that I must turn my steering-wheel only a little, but after three days of sliding—and during those three days I don't think I saw anything of the country—I never took my eyes off of the road, I simply sat there and balanced this machine—I found that I could go along at 10 or 12, or close up to 15 miles an hour through the mud without skidding. I think that was due in the first place to the long wheelbase; in the second place to having a large part of the weight upon the front wheels, and to the fact that I was steering with a wheel, which is not as sensitive as a lever. I noticed in coming up behind some of the lighter carriages, that where they had a very short wheelbase they seemed to be going like a snake, first to the right and then to the left, and the man steering was continually working his lever. My carriage did not do that. It simply went along steadily, with a little tendency to skid which I could regulate with the steering wheel.

Mr. Rupert B. Bramwell, advertising manager of the De Dion-Bouton Motorette Co., was married Oct. 10 to Miss Hattie Loulae Tyler, of Hyde Park, Mass. The best wishes of Mr. Bramwell's many friends will follow the young couple.

A success for American construction was scored in the Glasgow reliability trials by the Locomobile, which received a gold medal.

The New York to Rochester Endurance Run.—Report of the Committee.

In connection with its list of awards in the New York to Rochester endurance run, the committee in charge of that event has issued a very full report, and also a table showing the average speed of each vehicle for each stage, except when this fell below 8 miles per hour, in which case the rules provided that no credit should be given, or when it exceeded 15, in which case the official record showed 15 only. The tables and awards are given below in full, and also the most important passages of the report.

THE REPORT.

"As this was our first endurance contest, and as the building of automobiles in this country is a new industry, your Committee did not think it wise to place any restrictions upon the amount of repairing the contestants should be allowed to make or limit in any way the number of new parts which might be needed from time to time to replace portions of the machine which were worn out or that had become disabled through accidents. Some of the contestants had a large supply of spare parts sent on by train or carried in supply wagons. Some also had expert mechanics who traveled by train and worked at night, putting automobiles in repair for the next day's work.

"Your Committee is of the opinion, however, that in future contests participants should not be permitted to substitute new parts, except such as are carried upon the vehicle itself, and that repairs should be allowed only by the occupants of the carriage with such local assistance as can be had. Under these reasonable restrictions, and under practical every-day conditions, the enduring ability of the vehicles may thus be more accurately determined.

"In future hill-climbing trials, the Committee strongly recommend that a

special half day be set aside for such a contest. This plan will give ample time and allow one carriage at a time to make the ascent, giving each contestant a clear track without hindrance. To put Nelson's Hill into better shape the Committee spent about \$100. It is also recommended in future hill climbing contests a road be selected wide enough, so that every carriage failing to make the ascent may be promptly pushed to one side, leaving the roadway clear for the trial of the next vehicle.

"At times the roads were so rough and so dangerous that your Committee considers that the contest over these so-called roads was entirely too severe. No person owning an automobile for pleasure or for business would undertake to drive over the roads in such a dangerous condition. The contestants deserve the greatest praise for their courage and endurance in unflinchingly keeping at their self-appointed task. It is a grave question whether any machine built of wood, iron and steel ought to be required to negotiate such poor roads when in such horrible condition. The fact that there arrived at Rochester before the close of the night control, forty-two vehicles (and eight or ten later) over 50 per cent of the contesting carriages, shows beyond question that the American manufacturer has made substantial progress towards a practical, ideal automobile.

"At one place for several miles the highway ran between the New York Central & Hudson River Railroad on one side and the Erie Canal on the other. This portion of the road was a veritable quagmire, and it is a splendid commentary on the skill of the operators that no machine skidded from the road on to the tracks of the railway 30 feet below, or into the waters of the canal on the opposite side. We could but reflect as we went over this road that on our right was a great four-track railway costing many thousands of dollars per mile to construct and equip, and on

the left was the Erie Canal, that wonderful waterway owned and maintained by the State of New York, yet between the two was an alleged highway which connected the capital of the State with the second largest city, which roadway was entirely unworthy of the name of a road in any civilized community. If such a road were found in Africa, one would be inclined to pity the dusky denizens who had to travel over it. For such a travesty of a road to be found in a great State like ours in a beautiful, fertile and well-settled country is a burning disgrace to our boasted 20th Century civilization. Great railways and canals are the main arteries for the circulation of commerce. The highways represent the smaller arteries of this circulatory system. If the smaller arteries are choked the circulation of trade and commerce can never be as free and healthful as it should be, no matter how perfect the main channels may be.

"On account of the heavy condition of the roads and in order to utilize the full power of their engines, some of the contestants, for considerable periods, would run with their mufflers open, making a loud noise which tended to frighten horses. The wisdom of allowing this on such journeys is questionable. We deem it advisable in future trials, that all vehicles should be required to run without disconnecting or opening their mufflers in any way. It is especially gratifying to note that no serious accident occurred to the participants in the contest, or to others, on account of frightening horses along the highways."

The Committee expresses hearty thanks to President Shattuck, the Board of Governors, and the press, for support and assistance, and records also its appreciation of the sportsmanlike spirit shown by the contestants under the most trying circumstances. Special mention is made of the tireless efforts of Secretary Butler and of Superintendent W. H. Stearns.

TABLE OF AVERAGES.

Average Speed in miles per hour of the vehicles for the various periods between—

| Official number. | Description. | New York and Peekskill 44.6 miles. | Peekskill and Poughkeepsie 36.3 miles. | Poughkeepsie and Hudson 41.3 miles. | Hudson and Albany 34.1 miles. | Albany and Fonda 44.5 miles. | Fonda and Herkimer 37.7 miles. | Herkimer and Oneida 38.3 miles. | Oneida and Syracuse 26.8 miles. | Syracuse and Lyons 48 miles. | Lyons and Rochester 39.2 miles. | Average over the whole distance 390.8 miles. |
|------------------|--|------------------------------------|--|-------------------------------------|-------------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|---------------------------------|--|
| Class A. | | | | | | | | | | | | |
| 3 | Knickerbocker, No. 19..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 7 | Pierce Gasoline Runabout..... | X | 11.94 | 12.42 | 15 | 12.48 | X | 9.72 | 8.28 | X | ..... | ..... |
| 8 | Pierce Gasoline Runabout..... | 13.92 | 13.56 | 12.78 | 15 | 10.26 | 8.94 | X | 11.22 | 9.36 | 12.36 | 10.69 |
| 10 | Gladiator Volturette..... | 0 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11 | White Sewing Machine Co. Steam Runabout..... | 15 | 14.88 | 15 | 15 | 15 | 12.90 | 12.00 | X | 12.12 | 14.04 | 13.07 |
| 36 | Locomobile Runabout..... | 13.92 | 13.26 | 13.08 | 15 | 9.66 | X | 9.78 | 10.44 | ..... | ..... | ..... |
| 37 | Locomobile Runabout..... | 15 | 15 | 15 | 15 | 9.42 | 9.66 | 8.40 | 9.78 | 10.32 | 8.58 | 11.62 |
| 38 | Locomobile Runabout..... | 15 | 12.54 | 15 | 14.58 | 9.96 | X | 8.34 | 8.52 | 9.84 | X | 9.47 |
| 45 | Grout Brothers Stanhope..... | 14.94 | 14.28 | 13.50 | 12.84 | 8.34 | O | X | 10.08 | X | X | 7.21 |
| 47 | Locomobile Runabout..... | 14.58 | 13.26 | 14.46 | 14.82 | 12.12 | 8.76 | 13.74 | 9.60 | 10.92 | 12.06 | 12.58 |
| *62 | Autocar, 6 HP..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 63 | Duryea Gasoline 3-Wheel Phaeton..... | 12.42 | 14.10 | 15 | 15 | 9.12 | O | X | O | 9 | 9.48 | 8.71 |
| 66 | Knickerbocker, No. 20..... | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 72 | 5-HP. De Dion Motorette..... | 15 | 14.28 | 15 | 15 | 14.88 | 8.88 | 10.98 | 9.66 | 10.50 | 11.28 | 12.64 |
| 73 | 8-HP. De Dion Motorette..... | 13.50 | 14.40 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 74 | 5-HP. De Dion Motorette..... | 14.28 | 14.10 | 14.70 | X | 15 | X | ..... | ..... | ..... | ..... | ..... |
| 75 | 5-HP. De Dion Motorette..... | 14.76 | 15 | 15 | 11.10 | 8.40 | 10.08 | 11.46 | 10.32 | X | 9.90 | 10.38 |
| 82 | Knox Runabout (3 Wheel)..... | 13.92 | 12 | 14.16 | 14.28 | 9.54 | X | X | X | 8.16 | 9.06 | 8.50 |

THE AUTOMOBILE.

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TABLE OF AVERAGES—Continued.

Average speed in miles per hour of the vehicles for the various periods between—

| Official number. | Description. | New York and Peekskill 44.0 miles. | Peekskill and Poughkeepsie 36.3 miles. | Poughkeepsie and Hudson 41.3 miles. | Hudson and Albany 34.1 miles. | Albany and Fonda 44.5 miles. | Fonda and Herkimer 37.7 miles. | Herkimer and Oneida 38.3 miles. | Oneida and Syracuse 26.8 miles. | Syracuse and Lyons 48 miles. | Lyons and Rochester 39.2 miles. | Average over the whole distance 390.8 miles. |
|------------------|--|------------------------------------|--|-------------------------------------|-------------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|------------------------------|---------------------------------|--|
| 4 | Haynes-Apperson 2-Passenger Gasoline Carriage | 15 | 13.86 | 15 | 15 | 15 | 12.18 | 12.60 | 13.26 | 13.74 | 11.76 | 13.78 |
| 5 | Haynes-Apperson 2-Passenger Gasoline Carriage | 15 | 15 | 15 | 15 | 15 | 12.54 | 13.26 | 13.74 | 12.36 | 15 | 14.18 |
| 12 | White Sewing Machine Co. Stanhope..... | 13.68 | 15 | 15 | 15 | 15 | 12.66 | 12.66 | 12.54 | 10.86 | 13.44 | 13.55 |
| 13 | White Sewing Machine Co. Stanhope..... | 15 | 15 | 15 | 15 | 14.46 | 12.42 | 12.60 | 11.46 | 12 | 11.46 | 13.48 |
| 14 | White Sewing Machine Co. Stanhope..... | 15 | 15 | 15 | 15 | 15 | 13.02 | 12.96 | 10.86 | 10.26 | 14.40 | 13.68 |
| 15 | Overman Steam Runabout..... | 14.10 | 10.14 | 9.30 | X | .... | .... | .... | .... | .... | .... | .... |
| 16 | Overman Steam Runabout..... | 15 | 14.22 | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 20 | American Bicycle Co. "Toledo" Stanhope..... | X | 11.94 | 11.94 | X | X | 9.96 | 9 | X | 0 | X | 4.21 |
| 21 | American Bicycle Co. "Toledo" Stanhope..... | 10.56 | 13.92 | 10.02 | 10.80 | 12.30 | X | 11.10 | .... | .... | .... | .... |
| 22 | Winton 12-HP. Semi-Racing Car..... | 15 | 14.28 | 15 | 15 | 10.62 | X | 8.94 | 10.50 | 10.20 | X | 9.99 |
| 26 | Winton 12-HP. Semi-Racing Car..... | 15 | 15 | 15 | 15 | 15 | 8.64 | 8.28 | .... | .... | .... | .... |
| 27 | Autocar, 8½ HP..... | 15 | 15 | 14.46 | 15 | 10.32 | 0 | 8.10 | 9.96 | 8.34 | X | 9.69 |
| 28 | Lane Steam Surrey..... | 15 | 15 | 15 | 15 | 12.30 | 10.26 | 9.60 | 9.24 | 9.96 | 10.68 | 12.25 |
| 32 | Winton Phaeton, 8 HP..... | 15 | 15 | 15 | 15 | 15 | 10.56 | X | 11.64 | 10.86 | 9.60 | 11.82 |
| 33 | Winton Phaeton, 8 HP..... | 15 | 11.10 | 15 | 15 | 11.70 | .... | .... | .... | .... | .... | .... |
| 34 | St. Louis Gasoline Carriage, 7 HP..... | 13.92 | 11.64 | 14.82 | 14.88 | 12.06 | X | X | 11.64 | 9.54 | 12.90 | 10.17 |
| 35 | Foster Steam Touring Wagon..... | 15 | 15 | 15 | 15 | 15 | 0 | 9.42 | 10.08 | 11.28 | 9.78 | 11.63 |
| 39 | Locomobile Runabout, No. 2..... | 15 | 13.02 | 12.06 | 15 | 9.66 | 0 | 0 | 0 | 8.28 | X | 7.62 |
| 40 | Locomobile Runabout, 10 HP..... | 12.06 | 11.28 | 11.88 | 12.90 | 9.66 | X | .... | .... | .... | .... | .... |
| 41 | Locomobile Runabout, 10 HP..... | X | 10.80 | 15 | 15 | 13.86 | X | 8.76 | 10.20 | .... | .... | .... |
| 43 | Haynes-Apperson 4-Passenger Carriage..... | 12.78 | 12.06 | 12.54 | 12.54 | 10.38 | X | 9.72 | 10.14 | .... | .... | .... |
| 48 | Autocar, 8 HP..... | 10.98 | 14.52 | 12.18 | 10.56 | 11.64 | 11.10 | .... | .... | .... | .... | .... |
| 50 | Geneva Steam Runabout..... | 8.10 | 10.08 | X | .... | .... | .... | .... | .... | .... | .... | .... |
| 51 | Searchmont Gasoline Touring Car..... | 9.90 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 52 | Searchmont Gasoline Touring Car..... | 9.96 | 10.68 | 12.96 | 10.26 | X | X | .... | .... | .... | .... | .... |
| 53 | Searchmont Gasoline Touring Car..... | 11.98 | 0 | 0 | 0 | X | .... | .... | .... | .... | .... | .... |
| 54 | Stearns Steam Runabout..... | 15 | 13.50 | 15 | 15 | 11.04 | 10.14 | 13.74 | 8.28 | .... | .... | .... |
| *57 | Milwaukee Steam Touring Buggy..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 68 | Electric Vehicle Co. Gasoline Runabout..... | 11.82 | 9.18 | 12.24 | 14.28 | 9.42 | X | 0 | X | .... | .... | .... |
| 70 | Foster Steam Touring Wagon..... | 15 | 14.22 | 15 | 15 | 14.34 | 11.10 | 13.92 | 11.82 | 10.44 | 11.04 | 13.19 |
| 76 | Steam Vehicle Co. of America, Stanhope..... | 13.14 | 10.98 | X | X | 8.34 | X | X | X | .... | .... | .... |
| 78 | Elec. Vehicle Co. Gasoline Runabout Mark VIII.. | 14.58 | 13.86 | 11.70 | 12.60 | 11.40 | 9.18 | 10.26 | 11.04 | 11.10 | 13.26 | 11.92 |
| 80 | Elec. Vehicle Co. Gasoline Runabout Mark VIII.. | 14.34 | 14.70 | 15 | 12.90 | X | 11.74 | 14.52 | 10.32 | 11.28 | 13.32 | 11.69 |
| 81 | U. S. Long Distance Runabout..... | 12.96 | 14.88 | 14.28 | 15 | 13.74 | 9.54 | X | 9.30 | 9.18 | 9.84 | 10.91 |
| 85 | Darracq Motorette..... | 15 | 14.76 | 15 | 12.12 | .... | .... | .... | .... | .... | .... | .... |
| 86 | American Bicycle Co. Hydrocar..... | 15 | 13.74 | 15 | 15 | 12.60 | 9.42 | 12.18 | 8.46 | 11.70 | 11.58 | 12.60 |
| Class C. | | | | | | | | | | | | |
| 1 | Robinson Gasoline Touring Car..... | 15 | 15 | 15 | 15 | 15 | 12.36 | 13.26 | 13.14 | 10.02 | 12.96 | 13.63 |
| 2 | 12-HP. Panhard..... | 15 | 12.06 | 15 | 15 | 10.20 | 10.74 | 12.48 | 14.34 | 11.58 | 15 | 13.05 |
| 18 | Holyoke Gasoline Phaeton..... | 14.94 | 13.02 | 0 | 0 | 10.92 | 9.60 | X | 9.30 | 8.94 | 8.28 | 7.65 |
| 23 | Packard, Model C. 12 HP..... | 15 | 15 | 15 | 15 | 15 | 11.46 | X | 14.10 | 12.54 | 14.76 | 12.79 |
| 24 | Packard, Model C. 12 HP..... | 15 | 15 | 15 | 15 | 15 | 10.14 | 13.98 | 11.7 | 12.72 | 12.84 | 13.70 |
| *25 | 40-HP. Winton Racing Car..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 29 | Gasmobile, Phaeton, 9 HP..... | 15 | 15 | 15 | 15 | 14.58 | .... | .... | .... | .... | .... | .... |
| 30 | Gasmobile, Phaeton 9 HP..... | 15 | 9.30 | 8.58 | 12.78 | 15 | 9.54 | 10.56 | X | X | 13.80 | 9.64 |
| 31 | Gasmobile, Phaeton 9 HP..... | 14.52 | 13.02 | 15 | 15 | 14.64 | 11.22 | 9.18 | 12.06 | 10.08 | 14.40 | 12.91 |
| 44 | Stearns Gasoline Dos-a-dos..... | 12.66 | 12.84 | 12.60 | 13.02 | .... | .... | .... | .... | .... | .... | .... |
| *46 | 35-HP. Mercedes..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| *49 | 12-HP. Panhard..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 55 | 30-HP. Panhard..... | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 56 | Packard, Model C. 14 HP..... | 15 | 15 | 15 | 15 | 15 | 12.18 | 12.48 | 10.44 | 9 | 9.06 | 12.83 |
| 58 | 9-HP. Gasmobile..... | 14.34 | 13.50 | 10.08 | 13.26 | 9.18 | .... | .... | .... | .... | .... | .... |
| 59 | 9-HP. Gasmobile..... | 14.52 | 15 | 15 | 15 | 15 | 9.12 | X | 0 | 10.20 | X | 9.78 |
| 60 | 8-HP. Panhard..... | 0 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 61 | Packard, Model C. 12 HP..... | 15 | 15 | 14.64 | 15 | 14.58 | 11.82 | 0 | X | 10.98 | X | 10.11 |
| 65 | Century Steam Surrey..... | 11.22 | 0 | X | X | 9.30 | X | 9 | 9.72 | 8.70 | 9.72 | 5.93 |
| 69 | Elec. Vehicle Co. 16-HP. Gasoline Touring Car... | 11.34 | 9.90 | X | .... | .... | .... | .... | .... | .... | .... | .... |
| *71 | 40-HP. Winton Racing Car..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 77 | 9-HP. Gasmobile..... | 15 | 13.92 | 15 | 13.50 | 12.36 | X | 13.92 | 11.64 | 10.98 | 13.20 | 12.00 |
| 79 | 16-HP. Packard..... | 14.94 | 12.06 | 15 | 15 | 13.26 | 9.18 | 12.30 | 11.22 | 9.72 | 12.90 | 12.67 |
| Class D. | | | | | | | | | | | | |
| *6 | Stratton Motor Bicycle..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 9 | Thomas Motor Bicycle..... | 13.44 | 14.70 | 12.66 | 10.14 | 13.32 | 0 | 10.86 | X | .... | .... | .... |
| 64 | Orient Motor Bicycle..... | 13.56 | 13.86 | 15 | 15 | 15 | 0 | X | 12.18 | .... | .... | .... |
| 67 | Indian Motor Bicycle (Hendee)..... | 0 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 87 | Regas Motor Bicycle..... | 10.86 | 10.50 | 9.78 | X | .... | .... | .... | .... | .... | .... | .... |
| 88 | Regas Motor Bicycle..... | 10.74 | 9.90 | 9.96 | X | .... | .... | .... | .... | .... | .... | .... |
| 89 | Regas Motor Bicycle..... | 11.70 | X | 10.98 | .... | .... | .... | .... | .... | .... | .... | .... |
| Class E. | | | | | | | | | | | | |
| 17 | Baldwin Light Delivery Wagon, 7 HP..... | 9.48 | 9.24 | 11.22 | 13.68 | .... | .... | .... | .... | .... | .... | .... |
| 19 | American Bicycle Co., 20-HP. Steam Truck..... | 0 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 42 | Locomobile Quick Delivery..... | 8.58 | 7.86 | 8.88 | 8.04 | .... | .... | .... | .... | .... | .... | .... |

* Did not start.

X Less than 8 miles an hour.

0 Missed control.

THE AUTOMOBILE.

Calculation of Averages.

In calculating the average speeds, no speeds in excess of 15 miles per hour or below 8 miles per hour, as provided in the rules, are recognized.

Where less than 8 miles per hour is made in a control, or where the control is missed, the contestant receives no credit for that control.

The method of calculating the average speed for each control is as follows: Divide the length of the control in miles by the actual running time of the vehicle in minutes; multiply the quotient by 60 to obtain the average speed in miles per hour of the vehicle for that control:

Example.

New York to Peekskill, 44.6 miles. Actual running time, 178 minutes. $44.6 \text{ miles} \div 178 \text{ mins.} = .250 \times 60 = 15 \text{ miles per hour.}$

To obtain the general average in miles per hour for the whole distance from New York to Rochester, 390.8 miles (for the 10 controls), it becomes necessary, in order to obtain a true average (owing to the varying length of the different controls), to reduce each control to mile-hours, by multiplying the miles in the control by the average speed in miles per hour of the vehicle previously ascertained. The mile-hours for each of the 10 controls are then added and their sum is divided by the total 390.8 miles, the quotient being the average miles per hour for the whole distance.

A sample calculation is as follows:

| Controls. | Miles. | Actual running time in mins. | Average speed in miles per hour. | Mile-hours. |
|----------------------------|--------|------------------------------|----------------------------------|-------------|
| New York-Peekskill..... | 44.6 | 157 | 15 | 669.0 |
| Nelson Hill-Poughkeepsie.. | 36.3 | 135 | 15 | 544.5 |
| Poughkeepsie-Hudson..... | 41.3 | 169 | 14.64 | 604.6 |
| Hudson-Albany | 34.1 | 129 | 15 | 511.5 |
| Albany-Fonda | 44.5 | 183 | 14.58 | 648.8 |
| Fonda-Herkimer | 37.7 | 191 | 11.82 | 446.6 |
| Herkimer-Onondaga | 38.3 | (Missed) | O | O |
| Onondaga-Syracuse | 26.8 | x253 | X | X |
| Syracuse-Lyons | 48 | x261 | 10.98 | 527 |
| Lyons-Rochester..... | 39.2 | 508 | X | X |
| Total | 390.8 | | | 3,951.0 |

3,951 mile-hours \div 390.8 = 10.11 average miles per hour for the 10 periods.
 x Less than 8 miles an hour.
 X Less than 8 miles an hour.
 O Missed control.

Gasoline Vehicle Specifications.

A list of general specifications for a light gasoline vehicle on French lines, with the motor in front, has been prepared by H. Ward Leonard, of the Ward Leonard Electric Co., Bronxville, N. Y. Although naturally they are cut to fit the "Knickerbocker" car, many of them are of general application as well. Of these latter an abstract is given below, and the complete list will be sent by Mr. Leonard to anyone requesting it.

1. Weight per horse-power with tanks filled, not over 200 lbs.

3. A spring-actuated friction clutch between the motor and driving mechanism, released by pedal and with spring tension adjustable.

4. A pedal-operated, double-acting brake, acting on the main driving shaft

AWARDS.

The following vehicles completed the contest from New York to Rochester within the prescribed limits, and are entitled to certificates, as follows:

FIRST-CLASS CERTIFICATE.

(Average speed from 12 to 15 miles per hour.)

| Official No. | Description. | Entered by | Average miles per hour. |
|--------------|------------------------------|--|-------------------------|
| C-55 | 30 HP. Panhard | David Wolfe Bishop..... | 15 |
| B-6 | 8½ HP. Haynes-Apperson | Elmer Apperson | 14.18 |
| B-4 | 8 HP. Haynes-Apperson | Haynes-Apperson Co..... | 13.78 |
| C-24 | 12 HP. Packard | Ohio Automobile Co..... | 13.70 |
| B-14 | 6 HP. White | White Sewing Machine Co..... | 13.68 |
| C-1 | 16 HP. Robinson | J. R. Robinson, Jr..... | 13.63 |
| B-12 | 6 HP. White | White Sewing Machine Co..... | 13.55 |
| B-13 | 6 HP. White | White Sewing Machine Co..... | 13.48 |
| B-70 | 6 HP. Foster | Foster Automobile Mfg. Co..... | 13.19 |
| A-11 | 6 HP. White | White Sewing Machine Co..... | 13.07 |
| C-2 | 12 HP. Panhard | A. R. Shattuck | 13.05 |
| C-31 | 9 HP. Gasmobile | Albert T. Otto | 12.91 |
| C-56 | 14 HP. Packard | A. L. McMurtry | 12.83 |
| C-23 | 12 HP. Packard | Ohio Automobile Co..... | 12.79 |
| A-72 | 5 HP. Motorette | De Dion Bouton Motorette Co..... | 12.64 |
| B-86 | 6 HP. Hydrocar | American Bicycle Co..... | 12.60 |
| A-47 | 3½ HP. Locomobile | C. Arthur Benjamin..... | 12.58 |
| C-79 | 16 HP. Packard | Truman J. Martin and Ellicott Evans..... | 12.57 |
| B-28 | 9 HP. Lane Surrey | Lane Motor Vehicle Co..... | 12.25 |
| C-77 | 9 HP. Gasmobile | Alexander Fischer | 12 |

SECOND-CLASS CERTIFICATE.

(Average speed from 10 to 12 miles per hour.)

| Official No. | Description. | Entered by | Average miles per hour. |
|--------------|------------------------------|----------------------------------|-------------------------|
| B-78 | 4½ HP. Columbia | Jefferson Seligman | 11.92 |
| B-32 | 8 HP. Winton | Percy Owen | 11.82 |
| B-80 | 4½ HP. Columbia | Geo. B. Pettengill | 11.89 |
| B-35 | 6 HP. Foster | Foster Automobile Mfg. Co..... | 11.68 |
| A-37 | 3½ HP. Locomobile | Locomobile Co. of America..... | 11.62 |
| B-81 | 7 HP. Long Distance | F. E. Lewis, 2d..... | 10.91 |
| A-8 | 2½ HP. Pierce | G. N. Pierce Co..... | 10.69 |
| A-75 | 5 HP. De Dion Motorette..... | C. J. Field | 10.38 |
| B-34 | 7 HP. St. Louis | St. Louis Motor Carriage Co..... | 10.17 |
| C-61 | 12 HP. Packard | John M. Satterfield..... | 10.11 |

THIRD-CLASS CERTIFICATE.

(Average speed from 8 to 10 miles per hour.)

| Official No. | Description. | Entered by | Average miles per hour. |
|--------------|-------------------------|--------------------------------|-------------------------|
| B-22 | 12 HP. Winton | Alexander Dow | 9.99 |
| C-59 | 12 HP. Gasmobile..... | John Jacob Astor | 9.78 |
| B-27 | 8½ HP. Autocar | Louis S. Clarke | 9.69 |
| C-30 | 9 HP. Gasmobile | Sidney Dillon Ripley..... | 9.64 |
| A-38 | 3½ HP. Locomobile | Locomobile Co. of America..... | 9.47 |
| A-63 | 8 HP. Duryea | Duryea Power Co..... | 8.71 |
| A-82 | 4 HP. Knox..... | Knox Automobile Co..... | 8.50 |

The following vehicles finished at Rochester, but averaged for the whole distance less than 8 miles per hour:

| Official No. | Description. | Entered by | Average miles per hour. |
|--------------|-------------------------|--------------------------------|-------------------------|
| C-18 | 9 HP. Holyoke | C. G. Greuter..... | 7.65 |
| B-39 | 4½ HP. Locomobile | Locomobile Co. of America..... | 7.62 |
| A-45 | Stanhope | Grout Bros..... | 7.21 |
| C-65 | 9 HP. Century | C. R. Woodin | 5.93 |
| B-20 | 6½ HP. Toledo | American Bicycle Co..... | 4.21 |

between the motor and the differential. It should have metal-rubbing surfaces and be arranged to release the clutch before it takes hold.

5. Two band brakes, applied by a hand lever and acting on the rear hubs. They should be adjustable to act alike, and should be locked in position when desired.

6. Speeds, three forward and one reverse, the latter slower than the slowest forward speed. Low speed low enough to take the car up a 20 per cent. grade.

7. Wheel steering, irreversible in ordinary operation. The steering mechanism to be wholly above the level of the bottom of the axle (for protection), and all levers and joints to be in plain view.

11. Motor and speed changing gear enclosed in dust-proof cases and running in oil.

13. Water circulation efficient enough so that the car can run 30 minutes on lowest gear without water boiling, the water being at normal temperature at the start.

16. Speed-changing lever shall be locked except when clutch is open.

17. Rolling friction, on a hard level

floor, with engine disconnected, not over 20 lbs. per 1,000. That is, a steady pull of 20 lbs. should suffice to move a 1,000-lb. car.

18. Nuts which may work loose to be secured by cotter pins.

A New Wanamaker Station.

John Wanamaker has lately added a five-story building at 138-140 East 57th St., New York, as an automobile salesroom and storage and repair station. This is in addition to the building at Broadway and 10th St., already used by Mr. Wanamaker as a salesroom. The first floor of the new establishment will be used chiefly as a salesroom and to charge electric vehicles. The second floor will have offices, dressing rooms, shower baths, etc., and the upper floors will be devoted to storage. The basement will contain repair facilities. The establishment will be in charge of W. E. Hazleton.

The Wanamaker establishments in both New York and Philadelphia have taken the local agencies for the Searchmont gasoline vehicles.

A Steam Carriage Test.

The American Bicycle Co. started a Toledo steam carriage from Toledo on Monday, Oct. 14th, for a trip to New York. The telegrams sent each night by the operator, J. S. Mitchell, to the company, and given out by the latter as far as Rochester, indicate a very successful journey, the messages on six out of the seven days spent reporting "No repairs." The average distance per day was 58½ miles, and the average speed from start to stop, allowing an hour for lunch, works out to 8 2-3 miles per hour. The roads were reported mostly poor, with wet weather on two days. The trip was made via Fremont, Berea, Ashtabula, Erie, Dunkirk, Buffalo, and Rochester.

A Boston Exhibition.

The managers of the Automobile Headquarters, 33 Stanhope St., Boston, will signalize the opening of their new building at 66 and 68 Stanhope St., by a ten days' exhibition, Nov. 15th to 25th, at which manufacturers will be invited to exhibit without charge for space. Admission of the public will likewise be free, and the managers hope for a large representation. The new building has 33,000 feet of available floor space, and is equipped with every facility for dealing in and caring for automobiles. Its appointments include an individual heat and power plant, and offices, reading room, library, bath rooms and lockers, repair shop and inspection pits. The building is centrally located just off Copley Square and but a short distance from the Back Bay Stations.

Exhibits at Madison Square Garden Show.

The following list gives the exhibits of the several automobile manufacturers at the Madison Square Garden show, so far as information is obtainable as this issue goes to press:

American Bicycle Co., Toledo, O.: Six Waverley electric vehicles, including Model 21 (stanhope), No. 22 (stanhope with victoria top), No. 20 A (surrey), No. 3 (delivery wagon), and two others not named. The delivery wagon will be specially finished in white. In addition, two tables will contain parts used in these vehicles. The steam carriage exhibit of the same company will comprise eight Toledo vehicles of the regulation Models A, B, C, D, and E. Model B is Model A with storm top. Model C is the surrey and Model D a touring carriage. Separate tables will contain the individual working parts, including the boiler and engine, both with interiors exposed.

The Automobile Company of America, New York: Five passenger vehicles, as follows: 9-HP. standard phaeton, 12-HP. Gasmobile Special, 12-HP. surrey, 20-HP. H. C. Gasmobile surrey, and 35-HP. H. C. Gasmobile with tonneau body. The two latter have their engines in front, and are designed on French lines.

Century Motor Vehicle Co., Syracuse, N. Y.: One standard Century steam stanhope, and also an engine and various other parts separated. The exhibit will probably include also another steam carriage, which will be run from Syracuse to New York and shown in the condition in which it arrives.

Baker Motor Vehicle Co., Cleveland, O.: Two electric runabouts and two stanhopes. The runabouts will be the same as last year, and the stanhopes will be of a new design weighing complete about 900 pounds.

Haynes-Apperson Co., Kokomo, Ind.: One standard two-passenger phaeton, similar to those used in the endurance run, and one 6-HP. runabout, of similar design to the phaeton but weighing about 1,200 pounds.

Overman Automobile Co., New York: One Victor steam surrey, one runabout with embossed panels and wire wheels, one runabout with plain panels and Midgeley tubular steel wheels, and a dos-a-dos. A number of important changes have been made in the Victor carriage in the past year, all of which will be seen in the vehicles at the show.

Ohio Automobile Co., Warren, O.: One Model C standard Packard phaeton, this being the machine which went through the endurance run as C 24; also one model F, the next year's machine. This machine has the same engine power as the Model C, but has a longer wheel base, wood wheels, and three forward speeds instead of two. The Adams-McMurtry Co., the New York agents, will exhibit in the same space the "Rushmore" searchlight.

Peerless Mfg. Co., Cleveland, O.: One Type 3 Style E motor car of 8 HP. with tonneau body; also two other styles of body. The Peerless exhibit this year will show radical changes from that of a year ago.

The George N. Pierce Co., Buffalo, N. Y.: One "knockabout" model with 2½-HP. De Dion motor with water-cooled head; also one 3¼-HP. runabout of the same general type. The former is the same type as was used in the endurance run.

Steamobile Co. of America, Keene, N. H.: One Style A stanhope, one surrey, and a dos-a-dos attachment for the stanhope.

The Steam Vehicle Co. of America, New York: One 1902 model "Reading" touring carriage. This carriage will be equipped for carrying 12 gallons of gasoline, using two tanks, one of eight and one of four gallons. The company will also show its new 1902 model surrey, together with other machines of its standard type.

Upton Machine Co.: One No. 1 4-HP. Upton transmission gear, regular pattern; one No. 1 gear, special pattern; one No. 2, 8-HP. gear, special pattern, coupled to an Upton twin cylinder motor, and warranted to transmit by chain to the differential; one No. 3 gear of 12-HP., special pattern, coupled to an Upton twin cylinder motor and arranged to transmit to the differential on the gear axle through a longitudinal jointed shaft and bevel gears.

An Automobile Coat.

The accompanying cut shows the design of an automobile coat imported and sold by Chas. E. Miller, 97-101 Reade St., New York. It is made of French kid leather and is lined with fancy flannels. Coats of this character are almost indispensable to the chauffeur, being very warm and serviceable, and proof against both rain and



dust. Mr. Miller supplies also leather trousers to match the coats, and also caps, goggles and all other supplies needed by the chauffeur.

Business News.

Lehman Brothers, 10 Bond St., New York City, report an increasing demand for their automobile, carriage and sleigh heaters. One hundred and fifty thousand are in use at the present time, the number of users including automobilists, etc. The heater is portable and can be used in the coldest weather at a trifling cost. The manufacturers will be pleased to mail circular and other information on request.

Among the interesting features at the Madison Square Garden show will be an exhibit by the Wheel Within Wheel Co., Park Row Bldg., New York. The "wheel within wheel" was illustrated in these pages some months ago, but has since been perfected and is now on the market. The manufacturers will show an up-to-date automobile equipped with their wheels, and this machine will give practical evidence of what the wheel will do.

Smith & Mabley, New York, agents for the Panhard and other makes of foreign automobiles,

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have leased the building at 513 and 515 Seventh Ave., near the corner of 38th St., where they will carry on a storage and repair business in connection with the firms which they represent. A specialty will be made of repairing French machines, and parts will be carried so that repairs can be made quickly. The building consists of two floors and basement, thus affording ample facilities.

Mr. W. D. Gash has severed his connection with the Waltham Manufacturing Company, where he has been acting in the capacity of business manager, to accept the position of sales manager with the Searchmont Motor Company, of Philadelphia.

Chas. E. Miller, 97-101 Reade St., New York, reports that the steam carriage entered by Geo. C. Cannon in the Narragansett Park races was built with parts furnished Mr. Miller. Mr. Miller quotes a letter from Mr. Cannon in which the latter speaks very highly of all the parts furnished by him for the machine.

The Automobile Auction Association, a new concern organized to hold monthly auction sales of all classes of motor vehicles, has opened offices at No. 12 East 27th St., near Fifth Ave. and Madison Square Garden, New York, and have engaged the building at 143 West 51st St. as a permanent sales room, show room, and repository. The first sale is announced for Friday, Nov. 8th, and no doubt many of those at the show will be present.

Patents.

List of Automobile patents granted during month of October.

- 683,200—Motor vehicle. Issued to Dore & Evanovitch.
- 683,800—Automobile muffler. Issued to S. D. Mott.
- 683,673—Automobile underframe. Issued to H. M. Wells.
- 683,704—Motor vehicle. Issued to H. Partridge.
- 684,265—Motor carriage running gear. Issued to H. T. Kingsbury.

684,189—Spring mounting for motor vehicle frames. Issued to J. F. Byers.

683,977—Motor vehicle. Issued to A. Palmros.

684,322—Motor vehicle. Issued to A. C. Stewart.

684,371—Vehicle motor. Issued to A. A. Hamerschlag.

684,754—Automobile driving and steering gear. Issued to C. Hall.

684,516—Automobile vehicle. Issued to G. D. Leechman.

684,487—Hydrocarbon burner. Issued to F. R. White.

684,433—Differential speed mechanism. Issued to H. R. Isler.

684,647—Means for plugging pneumatic tires. Issued to H. P. Madsen.

684,527—Self-propelled vehicle brake mechanism. Issued to G. L. Reenstierna.

684,535—Motor vehicle. Issued to E. T. Birdsall.

684,733—Motor vehicle. Issued to G. E. Warren.

684,453—Vehicle wheel driving gear. Issued to A. M. Neeper.

NOTICES.

Cards "Wanted" and "For Sale" inserted under this heading at two cents per word, agate measure. Minimum price, fifty cents.

WANTED.

A bicycle salesman of eight years' experience will be at leisure after November 1; will consider road or inside offers. Address W. R. Chesley, 103 15th St., Buffalo, N. Y.

FOR SALE.

One Locomobile boiler 14-inch, 300 copper tubes, with burner attached. One double cylinder engine $2\frac{1}{2} \times 3\frac{1}{2}$, with pump attached. Price, \$75, for the two, or will sell either one separate; either one a bargain. Engine has ball bearings all around.

Wm. Hight, Newport, Vt.

Automobile Headquarters

66-68 Stanhope Street, Boston, Mass.

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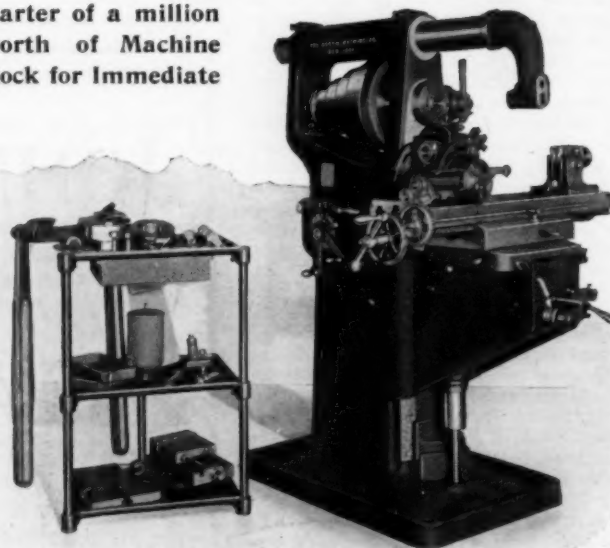
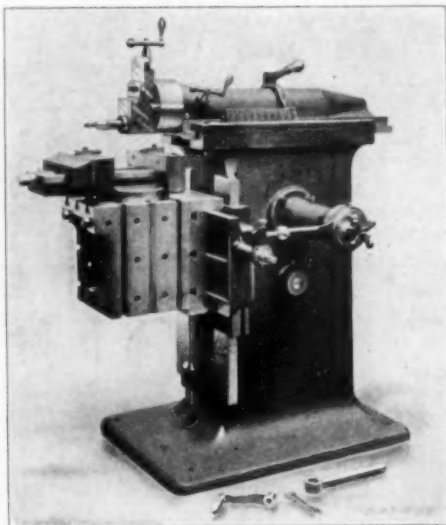
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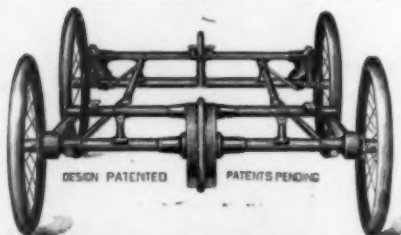
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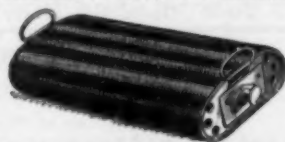
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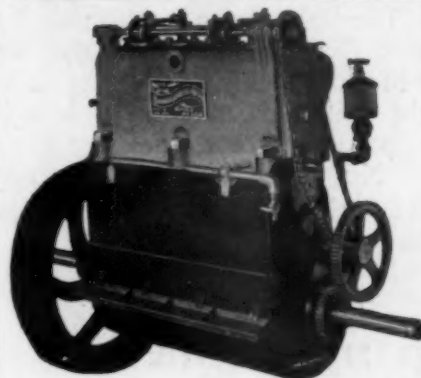
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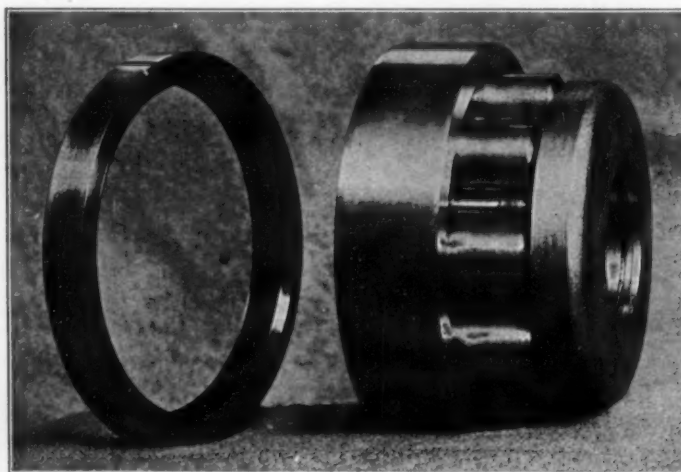
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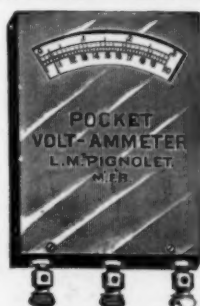
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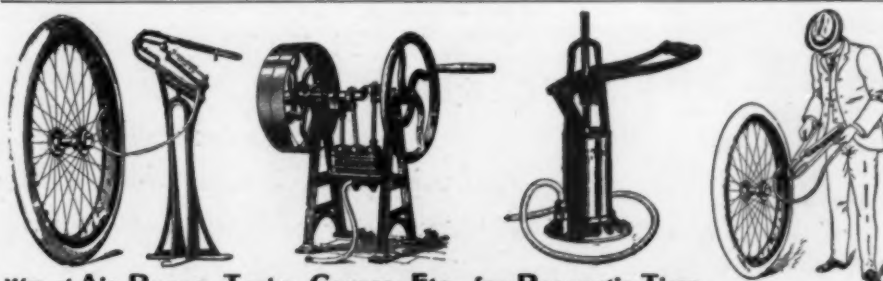
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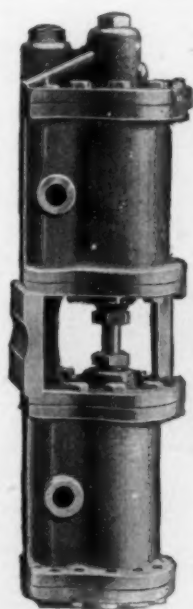
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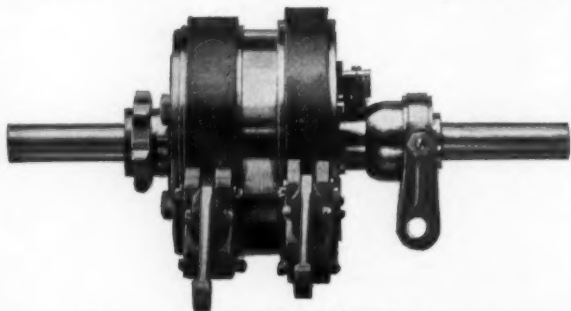
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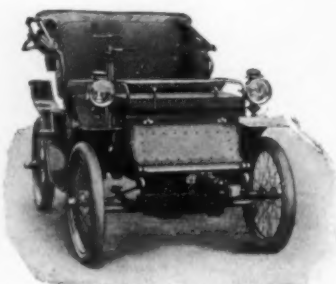
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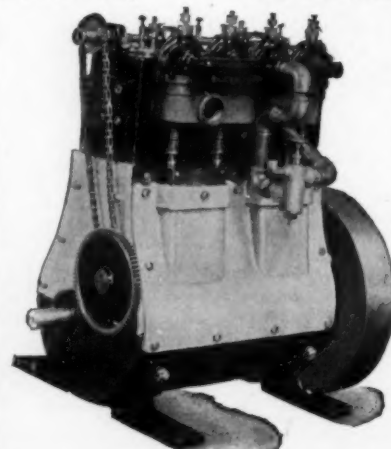
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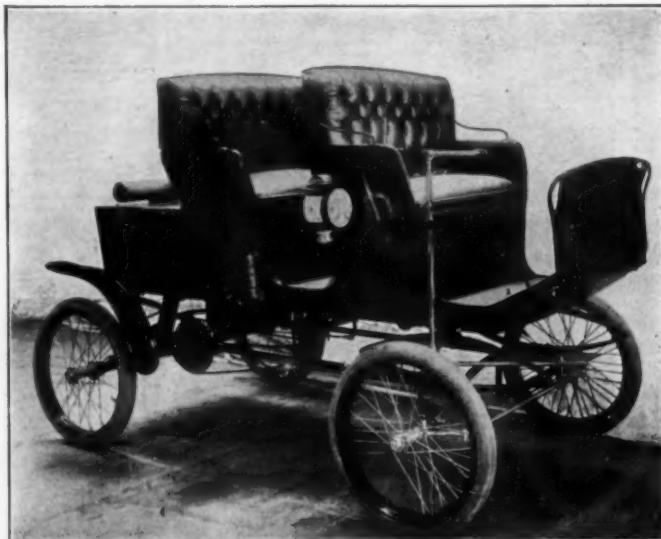
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Second Annual

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Madison Square Garden
New York City

November 2d to 9th
1901

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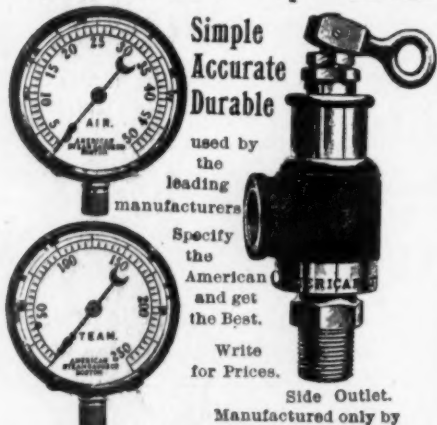
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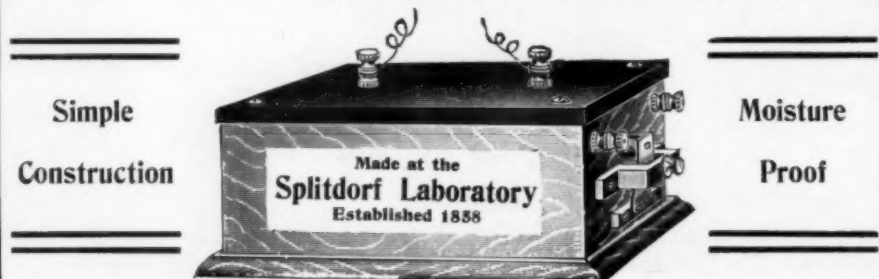
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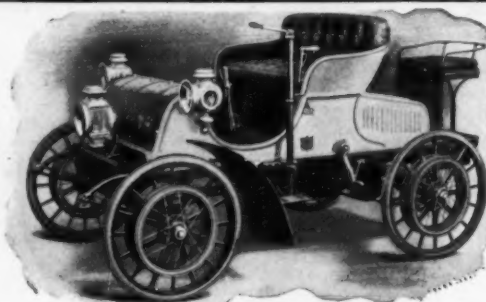


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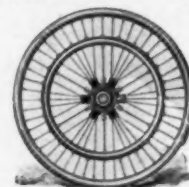
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POSITIVE PNEUMATIC EFFICIENCY

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By

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| One Model B with Victoria top, | 1,000.00 |
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New York-Buffalo Endurance Run—Two First-class Certificates.

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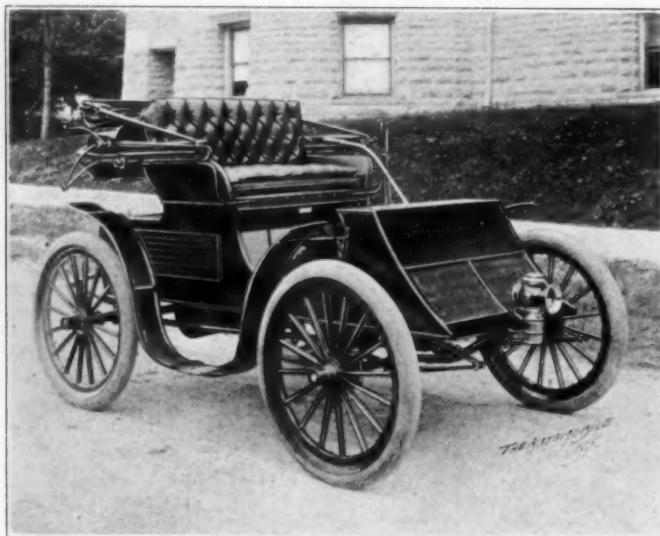
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Highest Award and Fastest Average time of any American Machines in the New York-Buffalo Endurance Contest.



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ON TIME TO THE MINUTE



THE
NEW YORK
VEHICLE TIRE

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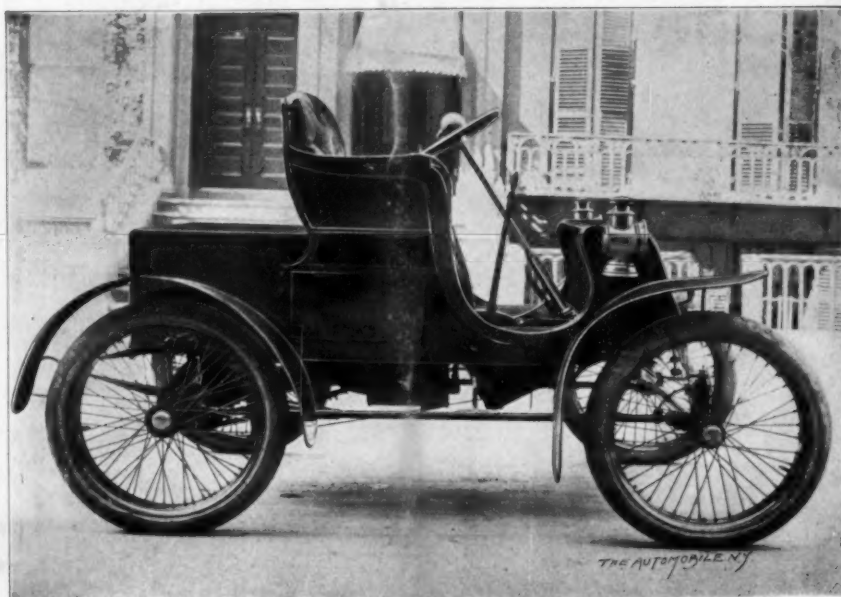
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